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Original Articles.

DOES THE REMOVAL OF THE OVARIES EXERT BENEFICIAL INFLUENCE ON THE SUBSEQUENT PROGRESS OF MALIGNANT DISEASES?

BY E. E. MONTGOMERY, M.D.,

PHILADELPHIA.

No class of cases has stimulated a greater variety of methods for treatment than malignant disease of the genital organs, including the mammary gland. In combating this dreadful disorder medical and surgical therapeutics have been exhausted. In searching for new agencies it is not surprising, in this day of organotherapy, that the animal secretions and extracts should have found employment. Thyroid extract has found its advocates. The well-recognized, and frequently demonstrated influence of the ovaries on the circulation of the genital glands naturally led to the consideration of the influence of their ablation on the preexisting malignant disease.

To G. Thomas Beatson of England belongs the honor of being the first surgeon who deliberately removed the appendages for the relief of mammary cancer. T[he] he did, June 15, 1895, on a woman aged 33 years, from whom in the preceding January the entire breast, including the pectoral muscle and the axillary glands, was removed for undoubted cancer, an operation which was so extensive on the skin surface as to require parallel incisions to permit the closure of the wound. Three months later the wound reopened and there was general involvement of the scar. Thyroid extract was then tried for its influence on mucoid degeneration, but without appreciable influence on the progress of the disease. Then, in June, as already stated, oöphorectomy was done. The right ovary was healthy, the left slightly cystic. The improvement in the diseased mammary region was immediate, though the use of thyroid extract as a powerful lymphatic stimulant was resumed at the end of a month and continued subsequently. The improvement was uninterrupted, and eight months later he could report the patient in good health with a healthy cicatrix. In his subsequent cases—two in number—while showing improvement, the result was not so gratifying as in the first case. In a recent discussion, Dr. Stites mentions having seen Beatson's first case, which was regarded as a cure, and asserts that the disease is returning.

Stanley Boyd reports seven cases in which he has performed oöphorectomy for the relief of inoperable cancer of the breast with appreciably favorable results in the majority of cases. His first case, two years after th[e] operation, was almost free from true cancer, but this was a patient in whom the disease naturally ran a slow course. He attributed the beneficial influence in both his and Beatson's cases, to the oöphorectomy, and asserts that the patients of the latter would have done just as well had thyroid extract been omitted from the subsequent treatment.

In order to explain the beneficial influence of oöphorectomy, Beatson finds it necessary to construct a new theory for the etiology of cancer. His theory is based on the natural reproductive power of the body cells as especially exemplified in the lower forms of animal life. In the hydra, on the division of its stricture into separate portions, each portion will develop into a new and complete hydra. In the higher forms of life, the cells of the embryo are arranged into separate layers, and by subsequent differentiation, these cells are specialized into separate organs and tissues. One very marked group retains its power, the special function being the reproduction of the species. The setting aside of these cells for the special function does not deprive the other cells of their reproductive power, but so long as they are healthy, the ovaries and testicles exert an inhibitory influence by which such power is checked or controlled; in other words, special reproductive organs, rather than the nervous system are more potent in the regulation of processes of metabolism. An altered ovarian secretion or migration of ovarian cells which become parasitic may be the source of origin of cancer. He quotes Klebs as having come to the conclusion that cancer epithelial cells are transformed into ovum cells, probably due to the fructifying influence of the leucocytes on the cancer cells, causing them to mulitply. Oöphorectomy, thus far, has been addressed to the treatment of malignant disease of the mammary gland, but if disease of the ovaries originates malignant disease, and their removal is serviceable in the one form, then the treatment should be applied to all forms of cancer and wherever situated, the extirpation of the ovaries should accompany the removal of the uterus in every case of uterine cancer, and the advisability of oöphorectomy should be considered in every case of inoperable cancer of the genitourinary canal; as well as of the mammary gland and digestive tract.

Such conclusion opens the gates to operative procedure so widely that it is extremely important this theory should be carefully considered and its results thoroughly weighed before the conclusion is promulgated. The theory is a new one, but where all is speculation, that one which best harmonizes with the subsequent progress of the disease is most worthy of credence. If, however, the healthy condition of the special reproductive organs is necessary to control and keep in check the latent reproductive action of the various cells, and cancer is a result of the loss of this action through

*Presented to the Section on Obstetrics and Diseases of Women, at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6-9, 1899.

disorder of their function, how much more must we expect the tissues to run riot, when inhibition is entirely removed. If the patient is liable to the genesis of cancer when inhibition is partially removed, will she not be much more subject to its ravages when inhibition is entirely destroyed? If we accept this control view, may we not explain the greater frequency of cancer at or following the climacteric to the decline of this inhibition, and further the apparently increased frequency of malignant disease in women who have had both ovaries removed as demonstrated by the statistics of Spencer Wells' individual work?

It would seem, then, that our theory carried to its logical sequence would contraindicate rather than render advisable the removal of the ovaries for malignant disease. While the theory of inhibition would seem to forbid the removal of the ovaries for relief of cancer, empiricism may demonstrate that the practice is more correct than the theory. An analysis of the results, however, does not in my judgment assure such a conclusion. The results of some fifteen operations in the hands of different operators show but one case in which the cure seems effected, and in this one a late report indicates a return. Many other cases appear temporarily benefited, but sooner or later the degenerative processes resume their fatal progress.

Every surgeon who has had an opportunity to operate on a large number of cases of malignant disease has been impressed with its erratic course. There are some cases in which the limits have been reached, in which it seems inadvisable to operate, and operation is followed by cure or delay in its progress for years. In other cases the involvement is so slight as to make us feel assured that operation must be associated with complete relief and yet a thorough, careful operation associated with removal of the ovaries is followed by early relapse.

My experience with the extirpation of the uterus for cancer has not impressed me with the fact that the individual enjoyed any special immunity against relapse on the removal of the ovaries. It does not seem unreasonable, however, that the ovaries may exert an influence on the circulation in the vicinity of the reproductive organs through the vasomotor system. Nature is economic of her forces. With the removal of the ovaries and the cessation of need for their performance of special functions, the unused organs are no longer so liberally supplied with nutrition, and hence temporary relief, but the history of cancer does not prove that it can be starved out, so relief must be at best but temporary.

A careful consideration of the subject forces us to the conclusion that the apparent relief is afforded through the vasomotor nervous system; that further experience is required to demonstrate not curability, but sufficient palliation and delay in the progress of the disease to compensate the patient for the discomfort of the additional operation; and that such an operation will only be of service if done during reproductive activity.

THIS SIGN—"Dr. Sylvester, American Dentist"—at the entrance to his office in a French city resulted in the condemnation of the dentist on two indictments: 1, for practicing under a pseudonym, as his name was in reality Sylvester Baumgartner; and 2, for neglecting to append the source of his medical diploma, the court asserting that dentistry being a branch of medicine, the derivation of the title of "Dr." must be stated on the sign to conform to the French law in respect to aliens practicing in France.

CLINICAL AND MICROSCOPIC DIFFERENTIATION OF SCLEROCYSTIC AND CIRRHOTIC DEGENERATION OF OVARIES AND CHRONIC OVARITIS.*

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CLEVELAND, OHIO.

It has been, and is still, the custom to regard the condition of the ovaries as termed cirrhotic and sclerocystic degeneration as merely a sequence of an acute ovaritis. No pathologist, so far as I have been able to learn, has attempted to separate these primary degenerations from those occurring secondarily to inflammation.

ETIOLOGY.

The etiologic factor is unknown. In speaking of arterioclerosis, Osler says that the tendency to this affection, which shows in entire families, can be explained in no other way than that "in the makeup of the machine bad material was used in the tubing." And it does seem that in these cases the connective tissue elements throughout the economy are of "bad material." The same authority recognizes an independent primary cirrhosis of the kidney.

A cirrhotic ovary is smaller than the normal: is hard and inelastic, and usually deeply corrugated. A sclerocystic ovary, however, is two or three times the size of the normal organ, and is globular rather than ovoid. The surface is smooth and glistening and studded with slight elevations caused by enlarged Graafian follicles beneath the tunica albuginea. These follicles vary in number from five to twenty or thirty. The largest are found near the surface. On section numerous smaller ones are usually seen nearer the center. The tunica albuginea is always greatly thickened, and is firm and unyielding. The hilum also is usually the first portion of the ovary to show corrugations. In a smaller portion of the cases the vessels within the folds of the broad ligament are sclerosed.

In a simple case there are never any signs about the tube or the ovary indicative of past inflammatory action. It is otherwise in the secondary degenerative changes. It is also true that there is not the marked contraction in the latter as in the primary, and this corresponds exactly to the gross appearance of the kidney of interstitial nephritis, which usually is differentiated from the small granular contracted kidney by the term subacute interstitial nephritis. In the secondary form the tunica rarely, if ever, is involved to the extent to which the primary is subjected.

The microscopic differences between the primary—non-inflammatory—and the secondary—inflammatory—degenerations are especially quite marked. In the secondary we invariably find, in a section taken from some portion of the ovary, a small round-celled infiltration, or the connective-tissue elements in some of their various stages of development. Also, however advanced the stage of fibrosis may be, the numerical relation of nuclear to cellular elements in this variety is always greater than in the primary form. And the microscopic appearance of the vascular system is also different.

In the inflammatory group we have primarily a dilatation of the vessels with secondary contractions of their greatly thickened walls, and a lessening of their lumen.

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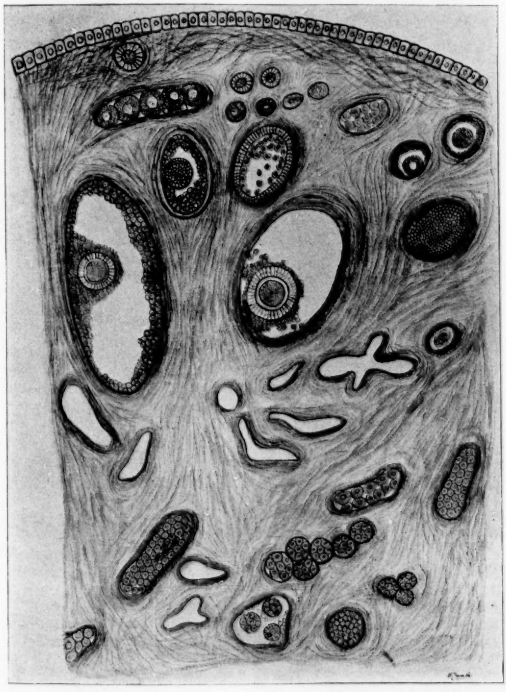
In the primary group there is usually no thickening of the vessel-walls; there is never any dilatation, and contraction occurs so early that the poor blood-supply is immediately noticeable, particularly to the periphery of the organ. In those cases of arteriosclerosis of the vessels within the broad ligament, we usually find the condition extending to the vessels entering the ovary—not otherwise. And, lastly, in the primary group the epithelial cells of the ovarian stroma are diminished in number, and usually in size. In some sections they are hard to distinguish from the connective-tissue elements, and appear to be undergoing a process of reversion. I would not state this as a fact, as yet, but it does frequently so appear.

These several microscopic differences are so constant and so decidedly marked, that I have no hesitation in separating them into two distinct pathologic groups.

In the chronic state of ovaritis the chief complaint is dysmenorrhea with intense neuralgic-like pains in one or both ovarian regions which are usually relieved with the commencement of the flow. Usually there is almost an entire subsidence of pain between the menstrual periods—at least, no exacerbations. Menorrhagia is also a constant symptom, undoubtedly due to the affection of the endometrium. The history of the early menstrual epoch is usually negative. In the primary or non-inflammatory, one will find that the dysmenorrhea has existed, usually from puberty, and that this symptom has gradually increased in severity, unrelieved by the flow, and occurring a number of days before, and lasting beyond the cessation of the flow.

A clinical symptom of the greatest importance in the making of a differential diagnosis is the occurrence of intermenstrual pain. The patient will state that she is



NORMAL OVARY (WALDEYER.)

SYMPTOMS.

The clinical history of the inflammatory group is well known and easily recognized. Usually there is a distinct history of infection of the endometrium and a subsequent salpingitis with extension to the ovary by contiguity of parts, or, as is more frequent in puerperal infection, the ovary is involved through the lymphatic system. Infection is accompanied by a chill or rigor, with an elevation of temperature, and an increase of the pulse-rate. Pain and localized tenderness are constant symptoms.

not only never free from pain, but has exacerbations between her periods, which sometimes are even more severe than dysmenorrhea—a poor term. A not infrequent symptom, too, is amenorrhea, or at least delayed catamenia. This prolongation of the usual prodromal stage is attended with most severe mental and physical suffering. And lastly the wear and the constant nervous tension to which these unfortunate patients are subjected lead to some of the most serious functional nerve disturbances. I will presently relate a few cases which more clearly define my meaning.

DIAGNOSIS.

I wish to allude briefly to an interesting discussion by Olshausen and Hegar, on the indications for castration. Olshausen says: "The difference between Hegar and me consists only in the fact that the former when he finds a few prominences on the ovary, or feels that it is firmer and somewhat thicker, or, on the contrary, smaller than usual, satisfies his anatomical conscience, while I, after having ascertained in the same way the dependence of the symptoms on the ovaries, at the most regard the often minimum anatomical changes as a corroboration of my opinion, but recognize the fact that similar symptoms may develop without any changes in the ovary which are clinically recognizable. But an indication can not be offered by changes which are only recognizable on the post-mortem table or in the extirpated organ. That the dilatation of a few follicles, the hyperplasia of the stroma and cirrhosis, may produce such an array of symptoms—as the various neuroses—is entirely unproven and a priori very improbable." He also says: "We have several times obtained permanent results from castration in cases in which careful examination showed merely hyperplastic conditions of the ovary. I then ask what remains of the anatomical basis which Hegar repeatedly declares as indispensable to the indication?"

Olshausen, then, castrates for neurotic symptoms without regard to pathologic changes. Hegar expresses astonishment when he relieves his patient after the removal of—to him—practically a normal organ. It is evident that both fail to appreciate the pathologic and clinical significance of these primary degenerations.

For the clearer understanding of the several points in making a differential diagnosis between the primary and the secondary groups, I arrange them in two columns.

PRIMARY OR NON-INFLAMMATORY SCLEROSIS (DIAGRAMMATIC).

A —Germinal layer somewhat flattened and with small nuclei.
A1—Thickened fibrous tunica.
B —Follicle which fails to break through the tunica.
C —Absence of round-celled infiltration—only a few connective-tissue cells with increase of fibrous elements in the stroma.
D —A few scattered epithelial cells of the stroma.
U —Vessel-wall slightly thickened.

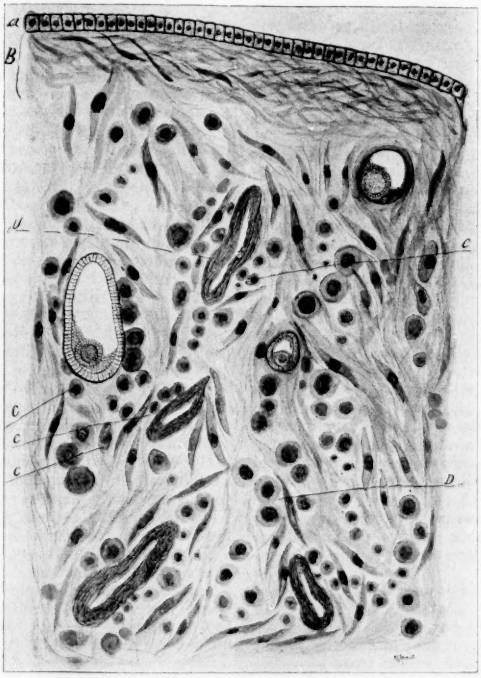
PRIMARY.	SECONDARY.
Non-Inflammatory.	Inflammatory.
No history of infection.	History of infection with peritonitis.
Occurs in early life. (From puberty to thirty.)	May occur at any period.
Often dysmenorrhea since puberty.	Dysmenorrhea after infection.
Intermenstrual dysmenorrheic pains.	Not so marked, or wholly wanting in some form.
Endometritis not constant.	Always accompanied by endometritis. Menorrhagia or premature catamenia.
Amenorrhea or delayed catamenia.	
Cystitis, a rare complication.	Often a cystitis dating from the infection. (Particularly if gonorrheal.)

Evidences in not a few cases of a granular and contracted kidney.	Sometimes a subacute nephritis due either to a prior septic condition or extension from cystitis.
In a large per cent. of cases a marked arteriosclerosis can be found in some portion of the arterial system.	
No evidences of pelvic peritonitis.	Evidences of a pelvic peritonitis.
Ovaries (one or both) usually prolapsed, firm, unyielding, globular in form, or small and exceedingly hard, but not adherent. Tubes usually not palpable.	May be prolapsed, bound down by peritonitic adhesions. Mobility of uterus impaired. The tubes usually palpable, and found increased in size.
Neurasthenia develops early, but is quickly superseded by one of the various neuroses.	Neurasthenia common. Neuroses rare.

supporting the prolapsed appendages by the use of tampons or pessaries. I have administered the desiccated ovary without obtaining the slightest effect on the symptoms, and no effect whatever on the condition. A great deal of stress is being placed to-day—especially by Continental writers—on the internal secretion of the ovary and its effect on the metabolism. I am as yet incredulous. I know of no way to relieve this class of patients except by castration.

CHRONIC OVARITIS.

A great deal may be done for a chronic ovaritis by general medical supervision, and by gynecologic treatment. Often attention to the general health is sufficient to relieve these patients of much suffering. Pelvic massage and galvanism with tampons soaked in ichthyol and glycerin carefully applied to exert a slight



SECONDARY OR INFLAMMATORY SCLEROSIS (DIAGRAMMATIC).
A—Germinal layer usually absent and replaced by round cells or connective tissue.
B—Tunica not much thickened nor fibrous.
C—Round-celled infiltration with increased nuclear elements as compared with the primary form; few fibrous elements also.
D—Epithelial cells of the stroma.
U—Thickened vessel-wall and seen near the surface.

TREATMENT.

For cirrhotic degeneration the internal administration of mercury and the iodids, together with general tonics, has been tried. Local application of poultices and blisters to the abdominal walls in the iliac regions; the painting of the vaginal vaults with iodin; faradization and galvanization to the cavity of the uterus, together with all sorts of almost indescribable methods have proven of no avail. There is some relief afforded by pressure, will, in a few cases, greatly increase the mobility of the adherent uterus and its adnexa, and relieve to a great extent the dysmenorrhea and the ovarian pain. If the patient is nearing the climacteric, an attempt should be made to tide her over the remaining period of sexual activity, when her symptoms will gradually decline with the cessation of the periodic congestions of the pelvic organs. But if the examination proves that the inflammation has been extensive

and its results of some magnitude, operation alone will avail.

The following cases illustrate these points:

Mrs. B. M., aged 38 years, has had two children, the youngest 8 years old. She has had two miscarriages, both prior to birth of the last child. There were no instrumental deliveries nor puerperal fever. The menses first occurred at the age of 18 years, and were at first irregular, but later were regular without pain, lasting four days. The quantity varied but little, and was never profuse. Her general appearance was good. She weighed 140 pounds. A general examination proved negative, as was also her family history.

Six years ago she was sudenly taken ill, with intense pain through the abdomen, and chills followed by a high fever. Just prior to that acute attack, she had considerable leucorrheal discharge, and urination was very painful and frequent. She was ill in bed for a number of weeks, but again gradually resumed her routine household work. Ever since that time she has suffered intense pain at each menstrual period. She has been compelled at these times to stay in bed during the first two days. The menses occur every three weeks, the flow being usually prolonged and increased in quantity over that of her earlier years. While her general physical condition has remained good, she has become extremely nervous, irritable and hypochondriac. She is easily depressed, and in these states loses control of her nerves—that is, she becomes hysteric. Urination is at times painful, the bowels are regular. Her digestion is much impaired, and she has frequent attacks of palpitation of the heart. The uterus was in retroversion, and could not be replaced: both appendages were prolapsed, and imbedded in firm inflammatory exudate. Slight manipulation occasioned severe pain.

In July, 1895, I removed both appendages, freed all pelvic adhesions, and suspended the uterus. Both tubes were enlarged, the walls thickened, and the fimbriated ends occluded. Both ovaries were imbedded in dense tissue, and were in a state of chronic imflammation. She has since passed through a series of severe trials, both of domestic and business nature, and has remained in most excellent condition.

Such is the history of all this class of cases. Your familiarity with them allows me to proceed to a report of several cases of the other variety—the non-inflammatory or primary cirrhotic and sclerocystic degenerations.

Mrs. L. S., aged 30, though married nine years, has had no pregnancies. The first menses occurred at 16 years. They were regular but painful, lasting seven to eight days, and at first profuse in quantity. Later she has been irregular, missing one and two successive periods, and suffering great distress at such times as the flow should have appeared. She has constant, never-ceasing pain in both ovarian regions—but particularly the right—with excessive exacerbations occurring at no stated period, but usually two or three times each month. She states that these pains are at times even greater in severity than the pains accompanying the flow, and are quite similar in character to the latter. She appears to be quite emaciated and of sallow complexion. She weighs ninety pounds, having lost much during the last two or three years.

Her mother died of cancer of the uterus. She had scarlet fever when a child, and has never been robust. A general examination was negative. She has been in poor health since 1887, for which she can assign no cause. She complains of backache, frequent attacks of migraine and pains in the right groin, extending down to the thigh. She is much reduced in weight, and is still losing flesh and strength. She is unable to do the general household duties, but spends most of her time, when not confined to bed, in china-painting. She is morose and taciturn, though naturally of a lively disposition, and is ready to submit to any measure which promises a chance of relief.

I found on examination an enlarged and cystic cervix; the body of the uterus was tender but not enlarged. Both ovaries were prolapsed and double the size of the average normal organ. She complained bitterly of pain during this examination.

June 28, 1895, I first curetted the uterus. The cervical canal was dilated, and both the external and internal uterine mouths were stenosed. The mucosa lining of the body was normal; that of the cervix indicated a hypertrophic glandular inflammation. Through a small incision in the abdominal wall I removed both ovaries and tubes. The tubes were normal; the left ovary was treble the normal size and completely occupied by numerous cysts varying greatly in size. Microscopic examination showed the framework to be composed of a dense fibrillary network with none of the epithelial or ordinary connective-tissue stroma remaining. The right ovary was about half the size of the former, and was of the type of sclerocystic degeneration.

It has invariably been my experience that the most pain is on that side in which the cirrhosis is most marked, and not dependent on the degree of prolapse of that organ.

In the fall of that same year she made an extended trip up the lakes, during which time she gained fifteen pounds in weight, and, better yet, regained all of her former cheerfulness of disposition. She is now in most active life.

Mrs. F. F., aged 25, a widow, has one child 5 years old, and has had no miscarriages. She was 16 years old when her first menstrual period occurred. They have always been irregular, attended with much pain, in duration from three to four days, and the quantity has always been scant. She had amenorrhea for five periods during the past year. She is anemic and very thin, weighing 92 pounds, though she measures five feet and seven inches in height. Her general condition is very poor. She has a weak, rapid, arrhythmic, irregular pulse. A marked sclerosis of the radials, temporals, and right popliteal arteries is observed. There is an enlarged, tender, prolapsed right kidney; and a suspicious sound is heard in the apices of both lungs during expiration. The slight amount of expectoration showed no trace of the existence of tuberculosis. Examination of the urine was negative, though she complained of a frequent desire to urinate. She also complained of frontal headache, and tenderness of the eyeballs, which was relieved by Dr. Brunner, oculist.

She complained of backache, pains in both groins, and soreness over the entire abdomen, dysmenorrhea and "spells of pain," during which she remained in bed usually two days. These "spells" came on as frequently as two to three times each month. Formerly she weighed 130 pounds, but has been losing during the past two or three years. She is easily fatigued and discouraged, and at such times usually "gives way to crying spells." Three years prior to the time of the taking of this history she had had a lacerated cervix

repaired. Pelvic examination shows a slight perineal tear, a roomy vagina, a small cervix, an enlarged and partially retroverted uterus, and both ovaries prolapsed—enlarged and globular in shape, tense and unyielding. There is no evidence of peritonitis.

She was under general and local treatment for three months, during which time she was fitted with glasses. A proper bandage was made for holding up the prolapsed kidney. The uterus was kept forward by a pessary, and congestion relieved by hot douches and boroglycerin tampons. Attention was given to the diet, and the regulation of bowel movements, and general tonics were administered. She gained five pounds in weight. Her headache and backache were relieved, but there was no cessation of the pains in the pelvis, which were, in her opinion, the source of all her ills. Accordingly, in July, 1895, I first curetted the uterus, and immediately opened the abdomen. I found no adhesions; both tubes were normal; both ovaries were sclerocystic. In both broad ligaments I found arteries and veins with greatly thickened cirrhotic walls, especially so on the right side, corresponding to the most painful side. Both appendages were removed.

During her convalescence particular care was given to massage of the right kidney. She rapidly gained in weight and in general health. She married again shortly after her operation, and has been able to carry out the duties of a mother to a number of children.

Miss F. McG., aged 20, had her first menses at 14, which were irregular during the first year. They have since been irregular. There was no severe dysmenorrhea until two years ago, since which time this symptom has steadily increased in severity. There has been a scanty flow, lasting usually two or three days only. She is poorly nourished, weighs 98 pounds, having lost ten pounds during the last few months. She is very costive. Urination is normal. A general examination proved negative. She had typhoid fever in 1895, and since then all her symptoms have been much aggravated. She complains of general lassitude, great weakness after the least exertion, severe pain in the right groin, constant but aggravated, preceding and during each period, and backache. The appetite and digestion are fair. There is constipation and leucorrhea. Her family say that she has become peevish and fretful, and altogether changed from her former usually happy nature.

The general examination was entirely negative. On pelvic examination the cervix was found eroded, the uterus in retroversion, both ovaries palpable, the left very much enlarged, spherical, tense, though not painful, the right ovary larger than normal, and giving the characteristic feel of a sclerocystic degeneration. In June, 1897, I curetted the uterus. On opening the abdomen I found a thin-walled ovarian cyst, the size of a hen's egg, and on the right side a much degenerated ovary of the sclerocystic variety. Both were removed.

Although on the second day an acute hepatitis developed, and she lay very ill for a number of days, she gradually recovered. She left the hospital in six weeks, and during the past summer has led an active, open-air life, indulging her heart's desire in cross-country riding on horseback.

I am indebted to Dr. Spence for drawing these beautiful charts from the microscopic slides submitted to him, and I feel that he has aided me greatly in bringing out the subject in so clear a light.

RELATIONS OF HEADACHE TO AFFECTIONS OF THE EYE.*

BY S. D. RISLEY, A.M., M.D.,

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PHILADELPHIA.

I am not unmindful of your courtesy in requesting me to speak to the Neurological Section on the ocular phases of headache. I have not accepted the honor, however, without many misgivings. The ophthalmologist, in common with a large portion of the profession, holds his breath, and treads with great circumspection when he approaches the mysterious precincts of the nervous system, that region in which his neurologic colleagues hold high carnival, and disport themselves in lighter vein. The subject chosen for your symposium, however, is one of great interest to the ophthalmologist, since so large a percentage of his patients suffer from headache. In the last one thousand private eye patients applying for treatment for all causes, 50 per cent. complained of this symptom, and a considerable percentage of this number came by the advice of the physician, or through the persuasion of some friend, complaining of headache alone, and were unconscious of any ocular defect. It would not be surprising, therefore, if the ophthalmic surgeon should be in danger of overestimating the significance of the ocular apparatus in the etiology of pain in the head.

It is now very generally recognized that eye strain and certain diseases of the eyes are, in a large number of persons, the sole and sufficient cause for headache. It is probably less generally recognized that ocular affections may be the unsuspected cause. Extended experience, however, has shown that, in other groups of patients who suffer from headache, there may be no necessary relation between existing ocular defects and the pain in the head. It is not an unusual experience to remove the eye strain by glasses, to the great relief of ocular symptoms, without any appreciable result in relieving the headache; or, certain kinds of pain in the head may be relieved, and others still persist. Moreover, it is quite common to find patients who suffer greatly from impaired vision, chronically inflamed and painful eyes, who never have headache or other reflex symptoms. Therefore, I very highly esteem this opportunity to discuss the possible relations between the ocular conditions and headache, together with certain other associated phenomena.

The subject should be approached with a feeling of marked conservatism. It is not unusual to have under treatment at one and the same time two patients with similar or identical ocular defects, one of whom has no symptoms other than weak, painful, or inflamed eyes, lowered sharpness of sight, and a blurred page; while the other is constantly in the slough of semi-invalidism, from constant pain in the head and other reflex symptoms, which, from exposure to light or persistent use of the eyes, or after some unusual exertion, culminate in more or less frequent and violent explosions of so-called "sick or nervous headache," both of whom find complete and lasting relief from glasses so nearly the same that they might be used interchangeably.

It is obvious, therefore, that in searching for an explanation of such phnomena we must look for individual peculiarities not directly referable to the eyes. It is

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true that difference of vocation or environment may, in such cases, be a sufficient explanation. That is to say, in one case persistent use of the eyes may be unnecessary, and in the other compulsory. One patient may be in good general health, the other the victim of some complicating diathesis, as for example, lithemia. Ambition to excel or the sanguine temperament may drive one into constant activity in spite of the pain occasioned by use of the eyes, while the other rejects the goal of ambition, unwilling to secure success, or to woo fame at the sacrifice of pain. But even here we see indications of difference in temperament; a suggestion of the phlegmatic individual in the one, and the neurotic in the other. I do not wish to trespass on the domain of the neurologist at this point, but simply to state the proposition that, given certain abnormal ocular conditions causing eye strain, other things being equal, the neurotic individual is more likely to suffer from headache and associated phenomena, than are those who can not be called nervous people.

Although it is now quite generally recognized that eye strain may be the cause of headache, the truth that ocular affections may be the unsuspected cause still stands in need of wider recognition. I am still seeing patients who have passed into middle life, having from youth been the victims of headache, who are cured of their life-long malady by the correction of ocular defects, the real cause of their suffering never before having been suspected by themselves, or by their physician. It is an interesting fact in this connection, in a large number of eye-strain patients, that the symptoms fall with great stress on the eyes without giving rise to headache or other reflex symptoms. That is to say, the eyes are painful, vision is more or less defective, they have blepharitis ciliaris, sympathetic conjunctivitis, styes, partial lachrymal retention, etc., but do not suffer from headache. It is true that pain in the head may also be present, but these patients do not, as a rule, belong to the headache group. I take it, however, that this group of patients is not the one which will most interest you as neurologists, since they so obviously fall into the hands of the ophthalmic surgeon. Those who suffer most severely from headache, demonstrably due to ocular defects or diseases, are often quite free from local symptoms, and frequently suffer for years without suspecting their eyes as the source of their trouble. If there are ocular symptoms, they occur *pari passu;* or come on after the reflexes, and are regarded by the patient as due to the headache. Patients have often told me that their "eyes were weak because they had a bad head," and submit quite reluctantly to eye treatment since they recognize no primary ocular disturbance.

The location of the pain in the head is usually suggestive. Vertex pain is comparatively rarely due to the eyes. In optic nerve disease, as in retrobulbar neuritis and atrophy, there is, in many cases, pain in the front of the head on top, but it is not a vertex pain. The pain, when associated with eye affections, occurs in the brow, occiput, back of the eyes, as a hemicrania, or in the temples, and in point of frequency in the order named. Simple eye strain due to error of refraction particularly in children, will usually give rise to brow pain. If associated with some abnormality of ocular balance, as insufficiency of the interni, esophoria, or a hyperphoria, there will usually be occipital pain also. If there is at the same time marked turgidity or inflammation of the choroid, with retinal irritation, or macular disease of the retina and choroid, there will be a tense postocular pain which shoots to the occiput, nape of the neck, even down the spine and radiating to the shoulders. Temple pains are not infrequent. I have in a number of instances witnessed the relief from pain in the region of the heart, which had caused much anxiety, follow the use of glasses, or the tenotomy of an ocular muscle.

There is a wide variety of manifestation in different patients. Many suffer almost constantly from brow and occipital pain. It disturbs their rest at night, and they awake in the morning with a dull pain in the occiput or nape of the neck. One patient remarked that he always woke in the morning feeling as though he had a billet of wood for a pillow. Although rarely free from pain, they suffer more or less acute exacerbations produced by exposure to light, from prolonged use of the eyes, or by general fatigue, but the symptoms are never violent. Others, while like the first, are rarely free from pain, are subject to a steadily progressive aggravation of all the symptoms until they culminate in violent onsets of "sick or nervous headaches," which drive them to bed in a darkened room, from which they emerge after twelve or twenty-four hours with a dull, sore head, red and weak eyes, which are tender to palpation, and unduly sensitive to light. The explanation for the advancing symptoms, up to the point of crisis, is found in the steadily increasing hyperemia and turgescence of the uveal tract of the eyes coming on under use, or by exposure to light. The relief comes from the subsidence of the congestion which results from the confinement in a darkened room, the emesis, the administration of saline cathartics, the cold compresses over eyes and brow, etc., which are the means of treatment ordinarily adopted by the patient. They return to their usual vocations, only to pass again through the inevitable cycle of suffering. Many persons through a large part of their lives suffer these constantly recurring torments once a week, or more or less frequently. Some recognize the effect of exposure to strong light, or the extraordinary use of the eyes as factors in causing these violent onsets of pain, but others never do, and ascribe their suffering to "biliousness," to overfatigue, hunger, and many other things, never suspecting their eyes as the cause.

Many regard their recurring sick headache as hereditary, since one or both parents or other members of the family suffer in the same manner. They think that therefore it is useless to seek permanent relief. While it may be true that the neurotic tendency is a family trait, it is equally true, even more probable, that the anatomic defects on which errors of refraction or ocular imbalance depend are hereditary. The regularity with which defective eyes, e. g., hypermetropia with astigmatism, are handed down from parent to child is one of the most striking facts in ophthalmology. It is highly probable that the defective form of the eye-ball which produces both the ametropia and the abnormal attachment of the ocular muscles to the globe, and is the cause of faulty binocular balance, is the direct result of defects in the shape of the bony orbit, and this in turn is due to distortion in the skull. It is to the form of the skull that family resemblances are largely due, hence the great frequency of heredity also in ocular defects. It is in a word another example where disease and impaired function has a congenital anatomic basis for its existence.

While the nausea and emesis together with the ensuing general relaxation seem to afford more or less speedy relief in the cases of so-called "sick headache," there are others who suffer what they call "nervous headache," and who are rarely nauseated, but have violent pain, and find the coveted relief only in opiates, or analgesics. I recall

the case of a merchant, the head of a large mercantile establishment, who had a high degree of hypermetropic astigmatism, and right hyperphoria, who was rarely free from a dull occipital pain. Suddenly, while at his place of business, he would be attacked by a right hemicrania, preceded by phosphenes. Taught by many experiences, he would summon a cab to take him home. His wife described one of these exacerbations to me. Arrived at home, his fortitude entirely exhausted, he would ring the door bell violently, enter the house holding his head between his hands, and, unable to reach his bed, would throw himself on the parlor or hall floor in despair, perfectly beside himself in an agony of suffering, when he would burst into a flood of tears, roar with pain, making the most violent manifestations, alarming his wife, and children and servants, until the doctor came and relieved him by a hypodermic injection of morphia. These attacks were relieved by the correction of his refraction error, and a subsequent tenotomy of the right superior rectus, but he still suffers from dull occipital pain "after a hard day." Since the attacks often came on after some fancied indulgence at the table, or at his club, or after an evening at the theater followed by a supper, he ascribed them to deranged stomach and liver, and was, as a consequence, a victim of the cathartic habit.

Another illustrative patient of this type was sent to me by the late Dr. William Pepper, under whose care he had been for "epileptic seizures." He also suffered the sudden violent onsets of headache very similar to those suffered by the case just related, but the paroxysms culminated in total loss of consciousness, convulsions, frothing at the mouth, and wounding of the tongue, after which he would fall into a profound sleep, often lasting for several hours, from which he could not be aroused. I found a hypertrophic astigmatism with exophoria, and marked choroidal disease due to eye strain. He received suitable correcting glasses after the prolonged use of a mydriatic, and returned to his home in one of the interior cities of Pennsylvania. I heard no more from him for eight years. He then returned for some change in his glasses, and much to my surprise related that he had not had a single return of his headache or convulsions after the treatment of his eyes.

There is a group of patients, of whom I have seen many examples, who suffer attacks of severe headache after journeying by rail, or in a carriage, or after a shopping expedition, the unsuspected cause of which is some ocular defect. They are usually women, and the paroxysm is ascribed to fatigue. I recall the case of a woman who wrote by the advice of her physician from a distant city, for an appointment for the examination of her eyes, stating that she would not be able to come to my office for a day, or possibly two days after her arrival in Philadelphia, as she would be compelled to pass that time in bed in a dark room suffering from "sick headache." Would I not see her at the hotel? I did so, and found her as she had predicted, in the throes of a violent headache; nervous, exhausted, suffering from nausea, and fruitless attempts at emesis. I immediately instilled a mydriatic, directed cold compresses to the eyes and brow, and gave her bromid of potassium. She was completely relieved in an hour, rose, ate a hearty meal, and came to my office the following day. She had a very high grade of hypermetropic astigmatism, which was corrected by glasses. She returned to her home wearing them and on her arrival at once wrote to me that for the first time in her experience she had been able to enjoy a railroad journey, and had reached home in perfect comfort.

The facial twitchings of school children, with brow pain, irritability of temper, restlessness, inability to sit quietly for a moment, disturbed sleep, precarious appetite, all of which makes them the despair of their mothers or teachers, I have many times seen relieved by a pair of glasses. Whether these cases are to be classed as petit chorea or not, it is certain that the eye strain was for them "the thorn in the flesh" which produced a constant irritation of the nervous system.

Ocular symptoms or headache not infrequently manifest themselves for the first time after an attack of acute illness, e. g., measles, scarlatina, or pertussis, and are not infrequently ascribed to the lowered vitality consequent upon disease. The ocular participation is therefore overlooked. Observation shows that even in adults the eye strain consequent upon a congenital defect or refraction may be borne without recognized symptoms up to a certain day which the patient fixes quite definitely as the time of breakdown. Not infrequently the breakdown comes with the depressing influence of an acute cold, after which the eyes and head are never comfortable, without correcting glasses, notwithstanding the fact that no trouble had before been experienced; or, he has his first headache after some extraordinary strain upon his physical endurance, and never finds relief except in a pair of glasses.

There is a considerable group of patients, usually men of affairs, between the ages of 40 and 50, who suddenly develop headache. As representing this group I recall the case of an eminent clergyman, aged 50. He not only had the care and responsibility of a large and influential parish, but often occupied the lecture platform, was the author of a number of books, and a frequent contributor to religious periodicals. He began to suffer from insomnia, and almost suddenly became the victim of severe occipital pain for which he sought the advice of his physician. He received a grave prognosis based on the theory of "cerebral hyperemia," and was advised to abandon his work for a year and seek relief in foreign travel.

Quite disheartened, he called upon me socially and related his condition. In detailing his symptoms it occurred to me that the occipital pain might be due to his eyes. He was to all appearances in perfect health, and was a remarkable example of stalwart manhood. At 50 years of age he had never worn a glass, notwithstanding the enormous amount of his literary labor. He received a pair of working glasses. His headache and insomnia disappeared at once, and although arrangements had been made for a long vacation, they were cancelled, and he went on with his work. In this case there could be no suspicion of a neurotic element entering as an etiologic factor. His symptoms were unquestionably the result of his neglect to neutralize by glasses the physiologic loss in the range of accommodation. A less vigorous man would have recognized the need of reading glasses at 43 to 45, instead of at 50 years of age.

There are many persons who have violent headaches not due to eye strain, but associated with pathologic conditions of the fundus oculi, as, for example, cases of retinitis macula luteæ, hemorrhagic retinitis, or optic neuritis. It is not always clear in these patients whether the disease is a purely local one. That is to say, the condition seen with the ophthalmoscope, may often be regarded as an indication of intracranial disease, to which the headache may be reasonably ascribed.

Standing in marked contrast to the groups of patients already described is another group, members of which wander from one consulting-room to another, receiving slight changes in their glasses, each time enjoying tem-

porary relief from their complaints. It is quite true that many persons with delicately poised nervous systems are greatly benefited by the correction of very low degrees of astigmatism, since any attempt to abandon their glasses leads promptly to a return of their headaches, but I am convinced that in others the glasses afford relief by a species of suggestion, precisely as they would be relieved by the mummeries of a bonesetter, a "Christian Scientist," or Osteopath. As an illustration of this class of patients I recall the history of a patient, referred to me by Dr. H. C. Wood, who displayed marked reflex phenomena apparently due to eye strain. She had a nearly emmetropic right eye and a significant degree of astigmatism in the left which I sought carefully to correct. During one of her consultations in which she had made the most of her symptoms, she claimed such a dread of light that she could not bear to look at the table of test letters. This I knew was not true, and simply directed her positively to open her eyes and look at the letters, that there was no sufficient reason for her not doing so. She obeyed at once, and the subjective examination was made without further difficulty. This over, she took a chair near me as I sat at my desk to write a prescription for glasses. She placed herself on the very edge of the chair, sat erect while a tense expression came into her face, a far-away look in her eyes. Her fingers were clenched tightly into the palms of her hands, every muscle was tightly fixed, and she said, "Doctor! don't you think it would be a good thing to send me away from home on a journey? somewhere! anywhere! I am oppressed, I am stifled at home. My husband is an excellent man, but plain, stolid and matter-of-fact. He can't comprehend me. I am not like other women. I am like a delicate, tightly-strung harp, the vibrations of every string causing the most exquisite sensations. A beautiful poem or painting, the odor of flowers, the stars at night, an exquisite strain of music drive me wild with a delight that borders on pain." She received a pair of glasses which she has not been able to neglect, but I am convinced that the relief she experienced was not so much due to her glasses as to a few weeks of "rest cure" in the hospital. Certain it is that she returned to her home with the tightly strung "harp strings" relaxed to such a normal tension that their vibrations gave only such sensations as cause pain or pleasure to ordinary mortals.

The following conclusions may be regarded as established by clinical experience:

1. Abnormalities of the ocular apparatus are in a large group of patients the sole and sufficient cause of headache.

2. These abnormalities of vision may be the unsuspected cause, and therefore, the absence of symptoms obviously referable to the eyes does not exclude them as an etiologic factor in headache, insomnia, vertigo, petit chorea in children, and certain stomach derangements.

3. The recent or sudden development of symptoms, after attacks of severe illness, as typhoid fever, the exanthemata, etc., or in association with more or less acute exacerbations of some general dyscrasia, is not sufficient evidence against ocular participation in causing the symptoms.

4. The participation of the eyes as an etiologic factor in headache can be positively excluded only in the absence of ocular disease or after the most painstaking correction of any existing error of refraction or abnormality of binocular balance.

5. For the relief of reflex symptoms accurate corrections are essential, and these can be secured only by the more or less prolonged use of a strong cycloplegic.

6. Immediate relief by these corrections in a large group of patients is not to be expected, since the pain is frequently due to associated pathologic conditions of the fundus oculi, and these require time for cure.

HEADACHES OF GASTRO-INTESTINAL DISORDERS.*

BY FRANK BILLINGS, M.D.,
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Gastro-intestinal disturbance is a very common cause of headache. The gastric disturbance which may give rise to headache may depend on organic stomach disease, or may be associated with the many functional disturbances of the stomach and bowels. The gastro-intestinal disturbance which apparently causes headache in some individuals is manifest in others by some other form of nervous or bodily distress. Organic disease of the gastro-intestinal tract probably does not primarily cause headache. The resulting dyspepsia fermentation, constipation and lessened antiseptic action of the stomach secretions are the probable source of an autointoxication, which may result in a disturbance of the nervous apparatus, and headache may be one of the symptom expressions of the toxemia.

In functional disorders of the stomach, like the dyspepsia due to hygienic errors, the neuroses of the stomach associated with general or local nervous disorders, like neurasthenia and tabes dorsalis, and the gastric neuroses manifested often in pelvic disorders of women, in floating kidney, etc., are marked by many of the symptoms; constipation, pyrosis, flatulence, epigastric fulness and tenderness or pain as in organic gastric disease, and headache is quite as common if not more constant than in organic disease.

Disturbance of function with or without organic disease seems to be the main causative factor of headache in gastro-intestinal troubles.

There are many conditions of the body which may disturb the stomach which are themselves the chief causes of headache, but for which the stomach receives the blame. In all conditions of the body associated with marked anemia, with cardiovascular disease, with functional or organic diseases of the nervous apparatus, with disease of the excretory organs—kidneys, skin, etc.—the nervous apparatus is much disturbed and perception of pain may be so exaggerated, that headache may result from any slight cause —"a last straw" to the overburdened irritable nervous apparatus. In short, in many such cases the headache is, like the stomach disturbance, a result of some bodily condition. On the other hand, the dyspeptic or the individual with chronic gastritis may, in consequence of dietary errors, suffer, in time, from malnutrition including anemia and a resulting nervous apparatus and headache.

It is sometimes very difficult to assign the headache to the proper cause when there are present, with the gastro-intestinal disorder, conditions of malnutrition, anemia, neurasthenia, etc. Heredity and the personal equation play an important part in many of these mixed cases. One finds a history of stomach disturbance with headache in families, and apparently quite as much an inheritance of poor digestive organs as the unstable nervous apparatus of neurotic families. The individual equation is also apparent in stomach disturbance and it must be confessed that the patient is usually a hysteric or a neu-

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rasthenic and the headache and the gastric trouble therefore due to the same general condition.

Fundamentally, headaches due to gastro-intestinal disorders are probably toxic. Of this we have no exact proof. The clinical conditions which exist in all headaches associated with disturbance of the stomach and intestine are most easily explained on this theory, and further emphasized by the therapeutic management, which gives the greatest relief to the patient.

An acute toxemia may occur in a perfectly healthy individual, from the overingestion of food, from the ingestion of indigestible food or from food contaminated by preservative chemicals or from food contaminated by toxins of decomposition. The epigastric pain and tenderness, the nausea and vomiting, the diarrhea or constipation, the depressed nervous apparatus; the cold extremities, small pulse, headache, dizziness, etc., during the acuteness of the attack, are typical of intoxication. We presume that the headache sometimes associated with cases of atony, dilatation and ptosis of the stomach is due to a toxemia by the poisons absorbed from the fermenting or decomposing contents of the stomach.

Not headache only, but weariness, melancholia, tinnitus, vertigo, sleeplessness, palpitation of heart, syncope and tetany or convulsions may occur. Atony, dilation and ptosis may occur in cancer, ulcer, chronic gastritis and in constitutional states, and the above-named phenomena in the diseases named.

"Bilious" attacks with nausea, vomiting, constipation, heavily coated tongue, foul breath, with headache, nervous depression, etc., are conditions apparently of chronic recurrent intoxication usually associated with gastro-intestinal dyspepsia, imperfect oxidation and assimilation by the liver and aggravated by defective excretion by the skin, liver and bowel. The idea of intoxication by bile, to which these characteristic symptoms were thought to be due and which gave it name, is no longer accepted as causative, inasmuch as headache and many of the other phenomena named are not often present in real cholemia.

Chronic constipation may cause headache, and when it occurs it is doubtless toxemic. However, in many cases of severe constipation, especially among women, no headache, or indeed no other nervous symptoms may appear. We have all seen individuals who were perfectly comfortable with constipation, the bowels moving only once a week or even at a longer interval. Again, constipation is such a common occurrence in so many other bodily conditions that it is fair to assign the nervous phenomena, including the headache, to the combined effect of the general or local state plus the effect of the toxemia due to the constipation. In some individuals constipation apparently produces depression of spirits, irritable temper and headache, and the symptoms disappear with a thorough evacuation of the bowels.

The toxic substances causing headache are really unknown. Bunge's theory, that the stomach is an organ of protection, rather than an organ of nutrition, by disinfection of the ingesta before they pass on to the intestine, where the digestion properly takes place, is worthy of much consideration. The acid contents of the stomach we know protect one against infection from cholera and typhoid. The presence of acids also prevents the formation of toxins from albuminous foods. It is possible, therefore, that the acidless contents of the stomach in atony, dilation, etc., may allow the formations of ptomains. Brieger's peptoxin, acetones, diacetic acid and other poisons which the normal acid gastric juice would not permit.

Senator, Bamberger, Lorenz, Haig, von Jaksch, von Norden, Bouchard, Rachford and many others have presented theories of autointoxication in gastric-intestinal disease and ascribed the intoxication to leucomains—uric acid, paraxanthin and xanthin—ptomains, peptoxin, acetone, diacetic acid, etc. Some of these poisonous principles have been found in the decomposed stomach contents, and others have been found in the urine during toxemic seizures. Furthermore, the isolated poisons injected into the bodies of animals have produced toxic symptoms similar to the phenomena associated with the gastro-intestinal disease.

Headache due to gastro-intestinal disturbance is said to be located definitely. In my experience this is not true. The brow of the whole frontal region is the most common seat, but may be occipital, vertical or general. It may be dull or sharp in character, with or without a sense of fulness or throbbing, and is usually aggravated by noises, bright light or by mental or physical effort. In acute attacks, nausea and vomiting usually occur. In the more chronic forms nausea may occur and rarely vomiting.

The diagnosis of headache due to gastro-intestinal disease or disturbance may be difficult. One must remember that gastro-intestinal disturbance, including constipation, is frequently secondary to states of general malnutrition and anemia, also to neurasthenia and other neuroses, to local disease of the skull, meninges or brain, to disturbances of the eye, ear and nose, to pelvic disorders, etc., and that the headache is due primarily to one or more of these conditions aggravated by the secondary gastro-intestinal disturbance. Indeed, the increasing experience of years has constantly narrowed the writer's cases primary of gastro-intestinal headaches and constantly broadened and increased the cases of headache due to general conditions of malassimilation, malnutrition and faulty excretion in which the gastro-intestinal condition was recognized as one of the results of an unhygienic life; a result which doubtless does aggravate the pre-existing poor general conditions and therefore becomes a secondary causative factor of headache.

Decomposed stomach contents, the presence of gastric ulcer, or cancer, chronic gastritis, duodenitis with intestinal indigestion and constipation with headache, and especially when the history and examination show no other abnormal conditions, will justify the diagnosis of headache due to primary gastro-intestinal disease.

Migraine or a condition much resembling it may sometimes be due to gastro-intestinal autointoxication. The diagnosis can be verified only by the cessation of the attacks after the removal of the gastro-intestinal cause.

TREATMENT.

Treatment of headaches of gastro-intestinal origin is palliative and curative.

Palliative: Remove the source of the poison by emptying the stomach, by emesis or lavage; move the bowels by cathartic or by colonic flushing; promote excretion of the poison from the blood by diluent drinks to aid skin activity and diuresis, and relieve the pain by small doses of the bromids combined with caffein, or by the cautious use of phenacetin or some of the other petroleum derivatives or, in very severe cases, by a small dose of morphin hypodermically. In incurable organic disease of the stomach palliation will be the limit of treatment.

Curative treatment will consist of the application of the laws of hygiene, modified to suit the individual case; a selected diet for each individual; the free use

of pure water as a diluent drink; recreation in the form of physical exercise or physical rest, commensurate with the mental activity or physical tire of the individual; the correction of irregular habits of sleep, of time of taking food and of exercise; the withdrawal of tobacco, tea, coffee and alcoholic drinks, which is usually necessary, and especially in the patients who suffer from the neurosis. Lavage the stomach when necessary and overcome the constipation by hygienic measures, if possible without drugs. In the conditions of malnutrition and anemia, give restorative tonics and an abundant simple diet. In short, a sensible hygienic life will not only prevent the headache, but will usually remove the gastro-intestinal disease or cause.

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QUANTITATIVE ESTIMATION OF ALBUMIN IN THE URINE.*

BY CHAS. W. PURDY, M.D., LL.D.

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Our present lack of a uniform method of expressing quantities of albumin in the urine detracts much from the value of all our methods; indeed, it renders the subject very confusing. As commonly employed, the term "percentage of albumin" is applied indifferently to gravimetric and volumetric measurements, as though they were synonymous, when, as a matter of fact, the two possess the most widely different significations. Thus, we commonly hear and read of percentages of albumin in the urine ranging from 20 to 40, etc., without further qualification. Such amounts expressed by actual weight would be a physical impossibility, since the proportion of albumin in the blood-serum itself never exceeds 9 per cent., and it would therefore be clearly impossible for the proteid contents of a fluid derived directly from the blood—such as the urine—to exceed that in the blood itself. As a matter of fact, the albumin in the urine expressed gravimetrically, rarely rises above 2 per cent., and perhaps never exceeds 3 per cent. It would therefore seem beyond question that at present we greatly need for clinical purposes some rapid, accurate, and ready method for estimating albumin in the urine, coupled with a more definite and exact method of expressing results obtained.

The author of this paper claims to have recently supplied this want, but before entering into a description of his method a brief survey will be taken of the more prominent methods heretofore employed.

THE GRAVIMETRIC METHOD.

The process consists in coagulation of the albumin, which may be accomplished either by boiling, or by means of a chemical agent; the succeeding steps being filtering out the albumin, collecting, drying and weighing.

Coagulation by Heat.—In this process a certain quantity of urine is taken—say 100 c.c.—a few drops of acetic acid added until the urine is distinctly acid, and then it is filtered. The urine is then put into a flask and gradually heated to boiling. The boiling should be continued for a half minute, and the urine then passed through a filter, the weight of the latter having been first ascertained and noted. The flask is next washed with distilled water, to secure all the adherent particles of albumin, and the contents of the flask are then again thrown on the filter. Next, the albumin is washed with boiling distilled water, by means of a pipette, the jet being directed so as to wash the albumin toward the center of the filter. The washing should be continued until the albumin becomes perfectly clean and white. Sometimes it is necessary to use hot alcohol to cleanse the albumin. The filter is next placed in an oven, the temperature of which is 100 C. (212 F.), and then left until desiccation is complete. Drying is known to be complete when two weighings at an interval of an hour are identical. From the whole weight that of the filter is deducted, and the difference represents the weight of albumin in 100 c.c. of urine, from which the whole amount may be readily calculated. The tediousness of the process is its chief drawback for clinical purposes, since it can not be carried out in less than five or six hours.

TITRATION METHOD OF TANRET.

This method consists in precipitating the albumin by means of double iodid of mercury and potassium solution, and estimating the amount of albumin by the amount of mercuric solution required to precipitate all the albumin. Thus, one drop of the precipitating solution delivered from a pipette of standard size precipitates exactly 0.005 gm. of albumin. Therefore as many drops as it takes to precipitate all the albumin in a given quantity of urine represents that number of times 0.005 gm. of albumin present.

The formula for the precipitating solution is: Potassium iodid 3.32 gm., hyd. bichlorid 1.35 gm., aqua destil. to 100 c. c. The formula for the confirmatory solution is hyd. bichlorid 1 gm., aqua destil. to 100 c.c.

Process.—It will be more convenient to always conduct the test with a certain quantity of urine—say 10 c. c.—as in such cases the number of drops of the solution it takes to precipitate all the albumin in 10 c. c. of urine will represent so many half grams of albumin per liter. Thus, if it takes 10 drops of the precipitating solution to precipitate all the albumin in 10 c. c. of urine, then we have 0.05 gm. of albumin in the 10 c.c. of urine, which gives us 5 gm. albumin per liter. We proceed by then taking 10 c.c. of the albuminous urine and adding to it 2 c. c. of acetic acid, and stirring well with a glass rod. Next the precipitating solution is added, drop by drop, stirring thoroughly each time. After the addition of each drop of the precipitating reagent, a drop of the urine is placed on a porcelain dish or tile and a drop of the confirmatory solution is brought into contact therewith. As soon as a yellowish-red color appears all the albumin is precipitated, and the process is completed. The amount of albumin may at once be determined by taking the number of drops of the precipitating reagent employed, subtracting 3 as having been used in excess to make the color development perfectly apparent, and considering the remainder as so many half grams of albumin per liter, or so many 0.005 grams in the 10 c. c. of urine.

So long as any albumin remains in solution in the urine, the precipitating reagent will not form red iodid of mercury when the bichlorid solution is added, but it immediately does so when all the albumin is precipitated, therefore the bichlorid solution constitutes a perfect and beautiful indicator.

The above test is a fairly ready and rapid method which might be made available for practical clinical work were it not for the fact that it can not be depended upon in point of accuracy. As is well known, Tanret's reagent precipitates all known proteids in the urine, and unless corrected by means of heat, many of these would often be estimated for albumin. All alkaloids likewise are thrown out by this reagent. In short, if this test

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be employed cold, as directed by its author, it can not but prove entirely untrustworthy and misleading.

DIFFERENTIAL DENSITY METHOD OF LANG, HOEBLER AND BORNHARDT.

This method is based upon the difference in the specific gravity of the urine before and after coagulation and removal of the albumin. According to Haebler, the difference must be multiplied by 210; and according to Bornhardt, it must be multiplied by 415 in order to find the percentage of albumin in the urine. Neubauer states that his observations show that Haebler's quotient is absolutely false, and, moreover, that Bornhardt's number with careful manipulation yields only tolerable results when the amount of albumin in the urine is not too small: but in small amounts the limit of error is very great. Halliburton says of this process: "The supposed constant factor is from its very nature a variable one, and a simple algebraic demonstration of this will be found in a paper by Huppert and Lahor[1]"

THE OPTICAL METHOD.

The principle of this method, proposed by Vogel, consists in gauging the amount of albumin by the degree of transparency of the urine after precipitation of the albumin. Various modifications of this method have been proposed, among the most simple of which is that of George Oliver. Thus, standard lines have been adopted by Oliver, of different thickness or width; corresponding to the different percentages of albumin, according to their degrees of visibility through a certain stratum of urine.

CIRCUMPOLARIZATION.

If the amount of albumin in the urine is not very small, and the urine is not too dark in color, and if it is rendered perfectly clear on filtering, the albumin may be estimated by means of the polarizing apparatus of Soliel-Ventizke. An observing-tube 200 mm. long is employed, and after filling and placing in the apparatus, by turning the compensator, the two halves of the field of the double plate are made exactly isochromatic. The zero point of the nonius now lies on the left side of the zero point of the scale, and each division, with a tube 200 mm. long corresponds to 1 gram of albumin in 100 c.c. of urine; and each division of the nonius to 0.1 gm.

ESBACH'S VOLUMETRIC METHOD.

For clinical purposes this method has attained very great popularity, chiefly on account of its simplicity, rather than from its accuracy. The process is simple in the extreme, although it takes twenty-four hours to complete the process. This method is based upon the fact that picric acid precipitates all the albumin in the urine at ordinary temperatures, and the assumption that the precipitate deposits in a uniform state and degree of density through gravitation, permitting volumetric measurement which corresponds with gravimetric measurement. The fact is incontestable, but the assumption is far from accurate.

The apparatus consists of a tube not unlike an ordinary test-tube in shape and size, but much thicker and graduated on the side so as to indicate the amounts of deposits, representing in grams and fractions thereof the albumin per liter of urine. The standard reagent is composed of 10 grams pure picric acid, 20 grams citric acid, distilled water to 1000 c.c.—1 liter.

Process.—The urine is poured into the albuminometer to the mark U, and the reagent is added to the letter R; the tube is then closed with a stopper and inverted a number of times until the urine and the reagent are thoroughly mingled. The tube is then stood in a rack for twenty-four hours, when the amount of albumin may be read off as indicated by the scale in grams per liter of urine. If it be desired to know the percentage of albumin in the urine, instead of the number of grams per liter, remove the decimal point one figure to the left—thus 5 grams per liter would be 0.5 per cent.

This method is simple and convenient; but, unfortunately, the results are only approximately accurate for the following reasons: In the first place, the reagent—picric acid—throws out and measures peptones, albumoses, nucleo-albumin, and practically all proteids met with in the urine in addition to alkaloids if present. In the second place, the force of gravitation, which is depended on for securing uniform packing of the albumin, is inadequate to overcome the lesser forces which often arise from varying conditions in the test itself and its physical surroundings, thus the slow chemical changes in progress between the reagents, or between the latter and the urine, or even in the latter alone, are often sufficient to liberate sufficient gases to completely overcome the force of gravitation, and the albumin often arises *en masse* to the surface. In a less degree the quantity of albumin itself, the specific gravity of the urine, and the surrounding temperature furnish opposing forces to that of gravitation, which disturbs uniformity of results and defeats the accuracy of the process. Observations in the writer's laboratory have shown conclusively that Esbach's method, with every precaution, is subject to constant and sometimes very wide errors.

THE AUTHOR'S CENTRIFUGAL METHOD.

It will be seen from the brief glance at the various quantitative methods just considered that the clinician demands something more accurate and ready for practical work than at present is available. The method herewith brought forward and recommended for practical clinical work is the result of five years' experimentation, with the details of which I will not take your time: The process in brief consists of the following steps: Precipitation of the albumin in carefully graduated percentage-tubes of 10 c.c. of the urine by means of 2 c.c. of 50 per cent. acetic acid and 3 c.c. of 1 to 10 aqueous solution of potassium ferrocyanid; after mingling the urine and reagents, the tubes should stand for ten minutes to ensure entire precipitation of the albumin. At the end of ten minutes the percentage-tubes are placed in a centrifuge, the radius of which with tubes in position must be exactly 6¾ inches. The tubes are revolved for exactly three minutes, at a uniform speed of 1500 revolutions per minute. The tubes are next removed and the amount of albumin is read off in bulk percentage, which, by the aid of accompanying table, is converted into percentage by weight and grams per fluid ounce. It will be observed that the time necessary to carry out this test need not exceed fifteen minutes, and as a result of many observations in the writer's laboratory in which the results were compared with the gravimetric method it has been found that the errors arising by this method need never amount to more than 0.01 per cent. Such minimal errors are of no practical import, being in fact no greater than ordinarily claimed for the gravimetric method itself.

To insure the most accurate results the following details should be observed: The urine should first be filtered and its chemical secretions ascertained, and if found to be neutral or alkaline it should be rendered frankly acid by the careful addition of a few drops of

[1] Ziet. f. Physiol. Chem., xii, 467.

acetic acid, great excess being avoided. Next, if the quantity of albumin be excessive the urine should be diluted with one or more volumes of water until the volumetric percentage does not exceed 10 or at most 15 per cent. Observations conducted in the writer's laboratory have determined the fact that accurate and uniform volumetric measurements of albumin in the urine are only possible when the volumetric percentage does not exceed 10 per cent., and this applies both to gravitation and centrifugal force.

With regard to the reagents: the 2 c.c. of 50 per cent. acetic acid should be added to 10 c.c. of the urine, the tubes should be inverted a number of times to insure thorough mingling of the acid with the urine; then 3 c.c. of the 1 to 10 ferrocyanid of potassium should be added, the tubes again inverted till all are well mingled, and lastly the tubes *should be stood aside for ten minutes* to insure entire precipitation of the albumin. Lastly, with regard to packing and measurement: The first and most important essential is an efficient centrifuge. The Purdy electric centrifuge possesses all the essentials for exact work. If this is at hand very few additional suggestions are necessary. If not, then a centrifuge must be employed that possesses certain essential features or is capable of such modification as will include these essentials, which are as follows: *a.* The percentage-tubes must be accurately graduated in tenths of a c.c. up to .15 c.c. *b.* The arm of the centrifuge should possess a radius of exactly 6¾ inches, that is to say, the linear distance from the center of the axle to the tip of either tube must be just 6¾ inches. *c.* The motor must be capable of an even and sustained speed of 1500 revolutions per minute, with the required radius, and carrying one ounce of urine. *d.* Lastly, some reliable method of gauging the exact speed of the motor must be employed. Any centrifuge that fulfils the above named requirements will give accurate results, as indicated by this method and the accompanying table.

PURDY'S QUANTITATIVE METHOD FOR ALBUMIN IN URINE.
(CENTRIFUGAL.)

Showing the relation between the volumetric and gravimetric percentage of albumin obtained by means of the centrifuge with radius of 6¾ inches; rate of speed 1500 revolutions per minute; time three minutes.

Volumetric percentage by centrifuge.	Percentage by weight of dry albumin	Grains per fluid ounce dry albumin	Volumetric percentage by centrifuge.	Percentage by weight of dry albumin	Grains per fluid ounce dry albumin	Volumetric percentage by centrifuge.	Percentage by weight of dry albumin	Grains per fluid ounce dry albumin
¼	0.005	0.025	13½	0.281	1.35	31½	0.656	3.15
½	0.01	0.05	14	0.292	1.4	32	0.667	3.2
¾	0.016	0.075	14½	0.302	1.45	32½	0.677	3.25
1	0.021	0.1	15	0.313	1.5	33	0.687	3.3
1¼	0.026	0.125	15½	0.323	1.55	33½	0.698	3.35
1½	0.031	0.15	16	0.333	1.6	34	0.708	3.4
1¾	0.036	0.175	16½	0.344	1.65	34½	0.719	3.45
2	0.042	0.2	17	0.354	1.7	35	0.729	3.5
2¼	0.047	0.225	17½	0.365	1.75	35½	0.74	3.55
2½	0.052	0.25	18	0.375	1.8	36	0.75	3.6
2¾	0.057	0.275	18½	0.385	1.85	36½	0.76	3.65
3	0.063	0.3	19	0.396	1.9	37	0.771	3.7
3¼	0.068	0.325	19½	0.406	1.95	37½	0.781	3.75
3½	0.073	0.35	20	0.417	2.	38	0.792	3.8
3¾	0.078	0.375	20½	0.427	2.05	38½	0.801	3.85
4	0.083	0.4	21	0.438	2.1	39	0.813	3.9
4¼	0.089	0.425	21½	0.448	2.15	39½	0.823	3.95
4½	0.094	0.450	22	0.458	2.2	40	0.833	4.
4¾	0.099	0.475	22½	0.469	2.25	40½	0.844	4.05
5	0.104	0.5	23	0.479	2.3	41	0.854	4.1
5½	0.111	0.55	23½	0.49	2.35	41½	0.865	4.15
6	0.125	0.6	24	0.5	2.4	42	0.875	4.2
6½	0.135	0.65	24½	0.51	2.45	42½	0.885	4.25
7	0.146	0.7	25	0.521	2.5	43	0.896	4.3
7½	0.156	0.75	25½	0.531	2.55	43½	0.906	4.35
8	0.167	0.8	26	0.542	2.6	44	0.917	4.4
8½	0.177	0.85	26½	0.552	2.65	44½	0.927	4.45
9	0.187	0.9	27	0.563	2.7	45	0.938	4.5
9½	0.198	0.95	27½	0.573	2.75	45½	0.948	4.55
10	0.208	1.	28	0.583	2.8	46	0.958	4.6
10½	0.219	1.05	28½	0.594	2.85	46½	0.969	4.65
11	0.229	1.1	29	0.604	2.9	47	0.979	4.7
11½	0.24	1.15	29½	0.615	2.95	47½	0.99	4.75
12	0.25	1.2	30	0.625	3.	48	1.	4.8
12½	0.26	1.25	30½	0.635	3.05	.....	.....	.....
13	0.271	1.3	31	0.646	3.1	.....	.....	.....

Test—2 c. c. of 50 per cent. acetic acid and 3 c. c. of 10 per cent. solution of ferrocyanid of potassium are added to 10 c. c. of the urine in the percentage-tube and stood aside for ten minutes, then placed in the centrifuge and revolved; rate of speed and time as stated at head of the table. If albumin is excessive dilute the urine with water till volume of albumin falls below 10 per cent. Multiply result by the number of dilutions employed before using the table.

This method has now been in daily use in the writer's laboratory for the past six months, where it has afforded the greatest possible satisfaction. The advantages claimed for this method over all others are its rapidity, simplicity, accuracy and comprehensiveness in expressing results, the volumetric percentage, the gravimetric percentage, the number of grains per ounce and the total amount by weight in twenty-four hours all being apparent by a single glance at the table.

57 East Twentieth Street.

ACCIDENTAL OR SPURIOUS ALBUMINURIA.*

BY CHARLES G. STOCKTON, M.D.

BUFFALO, N. Y.

The term accidental albuminuria as here used relates not only to the presence of albumin in the urine exclusive of disease of the kidney, but also of the various conditions aside from recognized kidney disease, which permit of the passage of serum albumin through the renal parenchyma into the urinary tubules. In other words, the term is employed to include those cases of albuminuria in which albumin finds its way into the urine from the pelvis of the kidneys, from the ureters, the bladder and the genitalia.

Albumin thus appearing possesses indirect interest to the student of internal medicine, because he must be able to exclude albumin arising from the sources above mentioned before he can affirm that he has to deal with albumin coming from the kidneys. As a matter of exclusion, therefore, the question must be made a familiar one.

Accidental albuminuria is of direct interest to the physician, because it is one of the diagnostic data for the recognition of pelvic renal diseases, ureteritis, and cystitis. The occurrence of albumin in pyelitis is almost constant while, in quantity, it varies with the character of the inflammation. It seems to bear direct ratio to the extent of pus formation in the pelvis of the kidney. When there is an inflammatory edema of the pelvis of the kidney, the exudation of albumin may be considerable. Occasionally in tubercular disease of the pelvis albumin may appear in small amount, but as the disease advances the albumin is more abundant, though this may be frequently explained by the fact that the parenchyma of the organ is at the same time involved. In

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calculus of the kidney, albumin at least in traces is rarely absent, nor is it seen in very large amounts.

In all these affections we expect to find the urine acid in reaction, sometimes sharply so, and the appearance of pus, blood and mucus either by macroscopic or microscopic examination, and very often by both. Upon these facts, and on the fact that the tube-casts are absent, we are able to infer that the albumin is derived from a point below the parenchyma of the kidney.

Not enough attention seems to have been called to the undoubted fact that traces of albumin are generally found in that really important affection, ureteritis. This condition, sometimes mistaken for appendicitis, salpingitis, or irritable ovary, is extremely common in victims of lithuria and oxaluria, especially in females. Very often there results an irritable bladder with frequent urination of very acid urine, containing traces of albumin, epithelium, and mucus. Pus-cells are common and also a few red blood-corpuscles.

I have twice seen this affection, in an acute form, produced in the right ureter following parturition in women having floating kidney. In each case there was evidence of irritation of the pelvis of the kidney, and it is believed that this trouble was induced by transient hydronephrosis occasioned by pressure of the fetal head on the right ureter. Both cases were seen by my colleague, M. D. Mann, who concurred in the view that there was no infection in the genital tract, and that the chills, high temperature, headache and profound nervous excitement resulted solely from the trouble with the ureter and renal pelvis.

These cases were both severe; the temperature in one reaching 106 degrees, and the other going above 104; the febrile paroxysms not altogether ceasing after ten days. In these instances the urine drawn with the catheter contained sufficient albumin to cause a slight precipitate with heat and acid, large numbers of pus cells, red blood-corpuscles and epithelium, but at no time were any tube-casts observed, nor was the quantity of urinary solids diminished. In both cases the patient made a perfect recovery, and at no subsequent time showed evidences of renal disease save such peculiarities of urine as are commonly associated with nephroptosis.

We have all seen albumin accompany the escape of a renal calculus into the bladder. A calculus having found its way into the bladder excites sufficient irritation to evoke a slight exudation of albumin from that organ. Here also we find pus-cells and mucus, as well as bladder epithelium, in the urine. There should be little difficulty in recognizing the albuminuria of cystitis. The well-known symptoms of the disease, together with the abundance of pus and mucus, bladder epithelium and alkaline reaction point at once to the source of the exudation. The error of assuming that because there is a cystitis there is not at the same time a pyelitis is more likely to be made, or a real nephritis. Particularly is this true of paralytics. I well remember a lesson taught me years ago by Gouley, in this pregnant sentence: "Most victims of paraplegia die from uremia secondary to infection of the bladder." According to my observation this is true. It can never be considered safe to allow urine containing albumin to go without frequent microscopic examinations.

In the male it is not uncommon to find albumin associated with inflammation of the prostatic urethra, the prostate, and the seminal vesicles. Needless to say, such conditions usually accompany or follow gonorrhea. Everyone has seen instances of men occasionally showing traces of albumin in the urine, generally associated with pus, sometimes traces of blood and always mucus, and occasionally some one has been so unwary as to pronounce this affection to be albuminuria and probably Bright's disease. Victims of spermatorrhea not infrequently show traces of albumin in the urine. It is surprising that this is not more frequently the case. Its presence is probably owing to catarrh of the seminal vesicles and irritation of the prostate. It seems hardly necessary to call attention to the vagina as a source of albumin in the urine. If one makes the blunder of filtering the urine before microscopic examination, as I have known to be done, it is possible that he may be led astray. I find that it is the part of wisdom to request women who show albumin in the urine, accompanied by pus, to thoroughly irrigate the vagina and external genitalia before voiding the urine that is to be preserved for examination.

In closing, it should be stated that accidental albuminuria is not to be disregarded, and the source of the albumin should always be most carefully examined into. It should also be reiterated that when albumin is found originating in the bladder, the ureter or the pelvis of the kidney, the urine should be frequently studied to make sure that infection is not invading the more important structures of the kidney.

DISCUSSION.

DISCUSSION ON PAPERS OF DRS. STOCKTON AND PURDY.

DR. ARTHUR ELLIOTT, Chicago—The significance of albumin in the urine in organic kidney disease has become lessened during recent years, and has been deposed from the position it once occupied in clinical esteem. Had Dr. Musser's paper been read, reference would doubtless have been made to cases of nephritis unaccompanied by albumin in the urine. These cases are, I am sure, more frequent than is generally supposed. Examination of the twenty-four hours' collected urine, with determination of urea and other urinary solids, and microscopic examination of the urine sediment, constitute in conjunction with the information elicited by physical examination a far more reliable basis of diagnosis than does the mere presence or absence of albumin. In cases of interstitial nephritis, albuminuria may be disregarded in arriving at a diagnosis, for its inconstancy in this lesion is notorious, the urine of quiescence being frequently free from albumin, but not so during activity. A point in the clinical aspect of albuminuria, which might be referred to, is the albuminuria accompanying gastro-intestinal disturbances. The urine under such circumstances is of high specific gravity, contains excesses of indican and throws down acid elements. I am inclined, as the result of such observations as I have been able to make, to believe that the albuminuria is the result of irritation of the renal secreting structure by certain toxins of intestinal derivation. This form of albuminuria, although as a rule slight, is contemporaneous with the gastro-intestinal dyspepsia. The albumin, centrifugally estimated, ranges from a faint trace to 2 or more per cent. bulk.

Dr. Purdy's method of estimating the amount of albumin in the urine is a very accurate and beautiful one. Personally I have been using the centrifuge for a number of years, following the original directions given by Dr. Purdy for the approximate determination of albumin. This I have found to be readier and quite as satisfactory as any of the mechanical means. It has been, however, of little value except for clinical and comparative purposes, because of the impossibility until now of converting the bulk percentage into definite quantitative amounts. This procedure is rendered easy by Dr. Purdy's table, and correct estimation is possible.

DR. A. L. BENEDICT, Buffalo, N. Y.—I want it distinctly understood that I do not come here to furnish wisdom, but to obtain some. In connection with albuminuria we occasionally find so-called peptonuria, and yet there is no true case of peptonuria on record. The only cases published were based on a test which was not correct. Thus, instead of peptonuria, we should say albumosuria. A definition of peptone is, "that soluble proteid which is not thrown down by ammonium sulphate." In testing for albumin it is wrong to use cold nitric acid, which throws down a mixture of albumin and albumose; if heat be used, pure albumin is thrown down. I wish to refer to four cases of albumosuria out of two hundred examined. One was acute inflammation of the bladder, combined with a

subacute gastroenteritis. This patient had been on a long journey and had drunk much ice-water. He had albumose in the urine, which cleared up in a day or two. The second was a case of diffuse nephritis, with mitral regurgitation and hepatic sclerosis, and he had been under observation for some time. The albumose persisted for many months and then disappeared, reappearing when the renal function failed. In the third patient it was impossible to make a thorough physical examination on account of obesity. The urine was free from casts, but there was present a small amount of albumin and albumose; the latter cleared up before the former—a phenomenon which is quite characteristic. The fourth was a case of subacute inflammation of the bladder. The primary condition was a colitis which was catarrhal or a mixed infection. The patient presented all the symptoms of typhoid, but the blood test was negative. The urine gave a doubtful Ehrlich's sign. It was a question in my mind whether it was typhoid or not. All these cases had albumosuria and not peptonuria. In some of these cases, also globulin was present. This is something about which we know but little. Peptonization by bacteria might be considered, theoretically, an explanation of albumosuria, but many of the latter cases occur in sterile urine. I have never found albumose to develop in albuminous urine that had been allowed to decompose. In other words, ordinary saprophytes have no peptonizing power.

DR. E. R. AXTELL, Denver, Colo.—We are indebted to Dr. Purdy for the work he has done for us in urinalysis. The test he has presented is in the way of accuracy, without loss of time. There are but few objections that could apply to it. It requires Dr. Purdy's electrical centrifuge. For many of us this is impossible of attainment, because we can not procure the motor force. I may mention the fact that with my centrifuge, having a radius of 11¼ inches, I have had to do some original work of my own in getting normal deposits. I find that if I revolve my hand centrifuge two hundred times, my readings are about those laid down by Dr. Purdy. If I take a solution of albumin or chlorid of known strength, and precipitate them by proper reagents, I get a proper reading after the revolution, proving that my results are accurate.

With albumin precipitation, there is a source of error in using a centrifuge. The albumin does not pack down evenly and on a level, but accumulates to a slight extent on the glass of the tube. This is certain to modify the reading. Possibly some little plan can be found to remedy this. I am indebted to Dr. Stockton for the term "ureteritis." I have called such cases renal colic.

DR. CARROLL E. EDSON, Denver, Colo.—I wish to call attention to a paper on "Albuminuria of Adolescence," written within the year, by Dr. Clement Dukes of England, who for many years has been studying this subject of occasional albuminuria in adolescence. Dr. Dukes made observations on school-boys, at either Eton or Rugby, I have forgotten which, and he found a large number of cases in which there were at the period of adolescence, small traces of albumin occasionally present; this amount of albumin was influenced largely by the time of day, by exercise, etc. In this paper he called attention to the fact that he could not speak of conclusions until the lapse of a certain time and the collection of a large number of statistics. He also speaks of having found a considerable number of cases, where the albumin cleared up under rest, and the albumin remained absent during school life where the lads were under control. But, subsequently, when they reached adult life, they developed albuminuria which was quite serious. He recently had a case in consultation, of an adult, where he could trace back the records to the adolescent period, and he found that the patient had been passing albumin at that time. This fact should put us on guard. Certain statistics of Dr. Dukes are sufficiently numerous now to warrant him in bringing it to our attention. This is not the accidental or spurious albuminuria, but cases of albuminuria of adolescence in which all spurious sources of albumin were ruled out.

DR. GEORGE DOCK, Ann Arbor, Mich.—Dr. Purdy's series of investigations are of great value. It might be worth while pointing out that the use of this method in practice is not necessary for proper treatment. The variation in the amount of albumin within small limits is very common and to be expected, from a number of causes. It is more important in practice, so far as albumin goes, to know the approximate amount than to be able to state it within minute fractions, and the examination of the sediment is, after all, of much greater importance. In regard to the matter of functional albuminuria, it is extremely important that we should look on every case of albuminuria, as Dr. Stockton has suggested, as possibly being the earliest stages of kidney disease, therefore, to tell a patient he has functional albuminuria is a dangerous thing to do. Repeated examinations of the urine should be urged. I also wish to speak of certain forms of albuminuria which come on in persons taking exercise in undue amounts. I have, during the past three years, been making observations on bicyclists and other athletes, and I have found, in a large number of cases, that even a moderate amount of exercise brings on albuminuria, and occasionally casts. In many cases there is not more than a trace of albumin, but a distinct sediment and casts of various kinds, sometimes hyaline, and sometimes blood and blood casts. It will be interesting to find out later if disease follows in these cases. It does not do to use the term nephritis too loosely; very often the condition is not a nephritis but a superficial degeneration. So far, I have not carried the observations far enough to see whether they suffer any permanent damage to the kidney. These observations are important enough to speak of now and they certainly are interesting.

DR. CHARLES E. MINOR, Asheville, N. C.—I was glad to hear such an authority as Dr. Dock dwell on the fact that the exact amount of albumin is not of such great importance. I do not wish to be understood as belittling this admirable work of Dr. Purdy's, but I feel that what we want is the more general adoption of less complicated methods of rapid diagnosis. To be of the greatest use an apparatus for clinical diagnostic use must be such that it can be generally adopted, not only in laboratories, where the conditions for Dr. Purdy's instrument are obtainable, but by the general practitioner throughout the country. Those of us who possess laboratories should remember that we are an insignificant minority and will for years remain so; we should not, as Dr. Purdy seems to do, discourage, but rather encourage the use of apparatus which, like Esebach's tube, is simple enough for easy use by the general practitioner, and which does not demand an electric current and an expensive machine whose price will certainly prevent its general adoption; it is hard enough in any case to get a majority of the profession to use the methods of precise diagnosis, without making it harder by discrediting the simpler, if not absolutely accurate, ones. What we want in the present state of the profession in the country is a more general adoption of clinical diagnosis in the profession at large, and if we are to make any progress we must not begin by discrediting the simpler apparatus or demanding too elaborate or expensive a one in its place. We will be lucky if we get 50 per cent. of the doctors of the country to pay any attention to the quantitative estimation of albumin; there is some hope of getting them to use Esebach's tube, none at all of getting them to purchase Purdy's form of centrifuge. I repeat, therefore, that while glad of this addition to our means of precise diagnosis, I regret that the author has seen fit to discourage the use of the older and simpler method.

DR. JUDSON DALAND, Philadelphia—So far as Esbach's method is concerned, it has been, in my experience, entirely unsatisfactory; it is exceedingly incorrect, in spite of the great commendation given it. A trace, moderate amount and large amount of albumin are terms usually employed by clinicians; but instead of these terms we should use percentages, which is the only accurate method of noting the quantity of albumin. The former terms have been used from necessity. I believe that if Dr. Purdy's instrument be used with these tables, greater accuracy will be secured. So far as the profession is concerned, it is quite impossible to carry on the laboratory work and to attend to a general practice. If you have assistants, they can attend to this work. But that is no argument against the instrument's precision. So far as the centrifuge is concerned it is a simple matter to secure 1500 revolutions per minute, and it is a procedure that occupies but a few minutes. Dr. Purdy's paper deserves a very careful consideration, and to the employment of this method I look forward with pleasure.

I was much interested in Dr. Stockton's paper on "Accidental Albuminuria." Occasionally, a cystitis is accompanied by renal disease. The question, therefore arises, as to how much of the albuminuria is due to liquor puris and how much is of renal origin. If some method could be adopted by which this differentiation could be made, accuracy in diagnosis would be increased. Not infrequently the amount of albumin seems disproportionately large when the small amount of pus is considered. Of course, when tube casts or cylindroids are present the diagnosis is simplified.

I recollect an instance, which occurred lately, of a floating kidney, which was exposed and secured by three ligatures. A careful examination showed no albumin immediately before the operation, but immediately after there appeared an amount of albumin, an amount equal to one-half of the bulk of urine; there was also a moderate amount of blood and a number of blood casts. The urinary evidence was that of an ordinary acute nephritis. In the course of two days the albuminuria rapidly diminished and, in the course of three weeks it had entirely

disappeared, and the urine was normal. This case is interesting as showing the effects on the urine, of three suture tracks in one kidney.

So far as the occurrence of nephritis without albuminuria is concerned, it seems to me that this has been demonstrated, and it also is quite clear that many cases of this form of disease where albuminuria is present are frequently overlooked. In the majority of instances the cause for this is the injudicious employment of light. If the test-tube is held before the window, the trace of albumin is frequently overlooked; but where it is held against a black background, and the light passes through the urine obliquely downward, the smallest trace may be detected. This particular technic is of practical importance.

DR. SCOTT of Indiana—I wish to express satisfaction with the use of Esbach's instrument; its estimation of albumin depending on the specific gravity. As stated by Dr. Purdy, the alkaloids and other substances are thrown out and measured when the picric acid is added, which makes an erroneous reading of the sediment. It is the sentiment of the society that a uniform radius and uniformity, at least to a certain extent, should be obtained. The centrifuge is indispensable. It seems to me that in the analysis of urine, there is too little attention paid to it. Two things should be considered, the analysis and the interpretation of the analysis. It is important to determine just what the result of the analysis will be. In the question of urea, there is no positive way of estimating the urea. The instruments are all erroneous because they depend so much on the barometric pressure, which varies so. Doremus' ureometer is a good instrument, but it is open to objections.

Regarding the question of albuminuria of adolescence, it is certainly not always true that we have disease of the kidneys or a nephritis. In any case it is impossible to tell which individual illness may not give rise to a nephritis from simple irritation or congestion of the kidneys. And yet it certainly is not wise to report to companies that a true albuminuria is present without determining, by means of the microscope, whether there is present blood or epithelial cells, which would call attention to a diseased condition of the kidneys. Albuminuria alone should not be considered evidence of a nephritis.

DR. GEORGE W. WEBSTER, Chicago—I wish to record two interesting observations. I have recently had two internes who had been assigned the duty of giving anesthetics. They were employed from four to seven hours each day in the administration of the anesthetics, and usually ether was the one given. In one assistant there appeared a large percentage of albumin, blood and casts. After resting for ten days, all this entirely disappeared. On resuming his duties at the hospital, he worked seven hours, and at the end of that time there appeared a large percentage of albumin, together with blood in the urine. After another absence from the hospital, for one month, he again reported and the albumin and blood had disappeared. It is a difficult question to tell where irritation ends and inflammation begins. The explanation may be the same as in typhoid fever, where albuminuria occurs in 25 per cent. of all cases examined.

DR. ARTHUR R. ELLIOTT, Chicago—I do not think Dr. Minor is warranted in arriving at his conclusions in reference to Dr. Purdy's paper. Dr. Purdy has said that he has endeavored to supply us with an accurate and simple mechanical means by which the results can be arrived at in the short space of fifteen minutes. To substitute a simple mechanical means for a complicated and tedious chemical procedure is certainly not calculated to introduce any confusing element into clinical work.

DR. CHARLES G. STOCKTON, Buffalo, N. Y.—I feel with Dr. Daland that, as a rule, the albumin found bears a relation to the amount of pus present. This is not invariable, but is the rule. One peculiar feature in cases of spurious albuminuria is that, in traces, albumin is frequently found associated with ureteritis. The intense acidity of the urine and the increased irritation exercised on the tissues of the ureter explain the occurrence of albumin in that condition. It is small in amount but important enough to call attention to it. Cases called nephritis are often not true nephritis, but simply albuminuria arising from the ureters. I would like very much to discuss the general subject of albuminuria, but I feel it would not be right to discuss it when the chief papers on that part of the topic have not been read.

IN A RECENT charge to the grand jury, convened in Newark, N. J., a justice rendered a decision in the case of accidents due to bicycle riding that: "The law does not create the ringing of the bell as a signal that will exonerate from responsibility."

OBSERVATIONS ON TONSILLECTOMY*

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CHICAGO.

There is yet a lamentable uncertainty and want of precision in the terms used generally by the profession in reference to the pharynx and larynx, this, too, notwithstanding the great amount that has been written and spoken on this particular subject. Such indiscriminate use of terms is not alone by the general practitioner, but in many cases by those who in other respects maintain their standing as specialists in the line of nose and throat work. These facts are in all probability due to the comparatively short history of the specialty as a distinct line of work, and the consequent somewhat limited amount of original investigation that has been made. We note as an instance that many presumable authorities indiscriminately use the terms tonsillitis and quinsy; or that the removal of any portion or of the entire gland is alike termed a tonsillotomy; how little is positively known of the function of the pillars, or indeed of the tonsillar gland itself.

I wish in the beginning to posit as the most important element in the following argument and deductions the opinion that a pathologic tonsil demands entire removal. The exceptions to this rule are few, and are ordinarily not difficult to differentiate. We may maintain as most important exceptions, some cases of malignancy; cases of known or strongly suspected hemophiliac tendency; the rare but possible condition of aneurysm in the region of the tonsil; in unusually severe cases of tubercular or syphilitic infection, with special manifestations in or about the tonsil. These, however, it will be observed, are only such conditions as would naturally be inhibitory indications to any operations at any time, and consequently very proper exceptions to the rule laid down above: admitting that there are oftimes conditions and circumstances which make the case a rule unto itself in a surgical aspect.

I maintain that the above rule is one strictly in consonance with the best practice of the most successful surgery, and that its violation is, as of any other well-established fact in medicine or surgery, unwarranted, injudicious, unscientific and unsurgical. What would be thought of the modern surgeon who would voluntarily and without further excuse than that they were difficult to reach, amputate a breast and leave enlarged axillary glands, or of one who would do a simple mastoid and leave untouched a severe middle-ear involvement, or one who would remove pus tubes and leave a retroverted uterus in situ because the adhesions were difficult to get at or break loose? Yet I believe such argument is applicable to the cases under discussion.

Dr. Goodale, in a recently published monograph on the pathologic histology of acute tonsillitis, has conclusively demonstrated that there are quite sufficient bacteria and other pathologic conditions present to warrant the conclusion that the doubtless resultant chronic condition is one not only demanding careful attention, but also is necessarily a pathology more or less diffused throughout the entire gland. The process of natural or spontaneous repair in cases of acute tonsillitis is yet to be demonstrated conclusively. Certainly, however, the almost universal experience would lead us to anticipate that the acute condition was quite likely an impor-

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tant etiologic factor in the various chronic pathologies met with so frequently.

It is unfortunate that as yet we do not know what is the function of the tonsillar gland. A dissection will demonstrate little beyond the fact that there is not a very intimate relation, anatomically, between the gland and the surrounding tissues; aside from the blood and lymph-vessels none of the fibers from the palatoglossus or palatopharyngei muscles leave the striations of those muscles and branch off into the body of the tonsil, nor do they anastomose with each other until they have passed below the triangular space occupied by the tonsil, thus apparently favoring as much as possible the enucleation of the gland when desired. The conclusions arrived at by Goodale in his extensive and careful investigations may be again referred to: "1, absorption exists normally in the tonsils, and takes place through the mucous membranes of the crypts; 2, the path of the absorbed substances is in the interfollicular lymph channels in the direction of the larger fibrous trabeculæ at the base of the organ; 3, during the process of absorption, foreign substances encounter phagocytic action on the part of the polynuclear leucocytes situated in and adjoining the mucous membrane."

Admitting these deductions of Goodale as true, it does not alter the truth of the statement that the crypts quite frequently extend almost the entire depth of the gland; indeed, enucleation of pathologic tonsils will in more than half the cases demonstrate the existence of abscesses and other debris in the depths of these crypts, quite on the other side of the tonsil from that presenting in the throat. If the lymphatics of the tonsil do anastomose to any great extent with those of the lateral and posterior pharynx, then might we not expect that more frequently an infection in the tonsils would be conveyed to the peritonsillar tissues? Or if the action of the tonsillar lymphatics was not alone absorptive, but expulsive as well, would it not be expected that the bacteria would become lodged deep in the plexus within, and we would much more frequently anticipate a phlegmonous condition therein in evidence of the correctness of our etiologic theory? The comparative absence of these evidences, however, must indicate that either the lymphatics in the so-called "lymphoid ring" are not very ready bearers of bacilli, or else the intimate connection, presumed by some authorities between the lymphoid tissue at the base of the tongue, between the pillars and in the vault of the pharynx is an imaginary one.

If it be true, as some have claimed, that the normal secretion of the tonsil is one of nature's leucocytic antiseptics, destroying each microbian intruder within the precincts of the crypts, then we are not warranted in removing a tonsil which is capable of producing this secretion. But I do not apprehend such surgery will be advocated by any member of this ASSOCIATION. It is not the question at issue once in a hundred cases, as to whether or not the tonsil is a pathologic one; it is rather the character and extent of the pathology, or the method of removal which we consider.

A careful and studious dissection of a number of pathologic tonsils will, I believe, prove the truth of the following statements:

1. The most violent pathologies are not always presented in the most hypertrophied tonsils. An overlapping pillar may so confine pyogenic germs as to force them into the surrounding areolar tissue. These pillars are then often hypertrophied to a considerable extent; the tonsil projects but little if any above the pillars, is firmly attached to them, and we have the so-called "submerged tonsil." This leads me to the additional fact that:

2. Such continuity of tissue formed by the pillar overlapping the tonsil, is distinctly pathologic, and being such, demands surgical interference, theoretically at least, in all cases, excepting only those mentioned earlier in this paper.

3. In all probability the gland has an absorptive action, but it is a much more popularly known fact that many pathologic tonsils do constantly emit from the mouths of the diseased crypts and follicles quantities of odoriferous pus cells, pyogenic germs and cheesy masses of debris into the throat; so also will be found numerous abscesses usually emptying into the lacunæ, to be conveyed to the throat and stomach.

4. It will furthermore be observed that the force and action of the muscles in deglutition has kept the surface of the gland well freed from these products of decomposition, and that consequently the most serious condition is to be found in the deepest crypts. The truth of this statement can only be determined by a considerable number of post-mortem dissections, or by a bloodless process of enucleation on the living.

5. The tonsil will frequently be found firmly adherent to both pillars, and when so, either from repeated inflammatory conditions or as a result of a previous tonsillotomy, or from any other cause leaving a cicatricial bridge, they will be found firmly bound together, their independent action being prevented. The importance of such inhibition of function will be the better appreciated if our experience has led us to observe the results obtained by the removal of such cicatricial stumps from the throats of professional vocalists. The unanimous testimony of such patients, whom I consider much above the ordinary in intelligence and whose judgment must in a large measure be competent, is to the effect that they can, after the removal of these stumps, by the same effort at vocalization produce a much better quality of tone than before.

6. A more perfect incubator of disease germs can not well be imagined than is found in a pathologic tonsillar crypt. The chances are that the very fact of its being pathologic precludes to a great extent, if not entirely, the possibility of the antiseptic action of the leucocytes. We have here warmth, moisture and mechanical protection; can it be a matter of wonder why so many cultures can be so easily made from the deep crypts of a pathologic tonsil?

7. It will be found that the larger end of the gland is uppermost, frequently quite imbedded beneath the pillars, although to the casual observer the opposite would seem to be true. This can be easily demonstrated by having the patient gag, when it will be seen that the gland bulges out prominently from underneath the pharyngeal aponeurosis. I desire to call attention at this time to two points: one is, that it is often in this hidden portion of the tonsil the most serious pathology is found; and a second is that in such a condition a tonsillotome or any similar instrument, short of one adapted to a dissecting process, will fail of success to the extent to which it leaves a portion of the pathologic gland remaining in the throat.

What then are the general results of tonsillectomy, as compared with those obtained by the usual operation of tonsillotomy, as is ordinarily done by the general practitioner or most specialists as well?

1. It gives a cosmetically perfect throat. It gives a throat practically precluding the possibility of a return of the tonsillitis. It gives a throat in which there can

be no absorption of the toxins or bacilli into the lymph-channels at that point; at the same time it certainly offers to the patient a better chance for recovery should they subsequently be subject to an attack of any disease affecting the throat, such as the exanthemata, diphtheria or quinsy.

2. It liberates and allows a perfect action of the pillars and soft palate, the same result holding whether the pillars were adherent from inflammatory action or bound together by a cicatricial stump the result of a former tonsillotomy.

3. It removes a mechanical obstruction to the sound waves. This, in the case of those professional people who are compelled to use the voice in singing or speaking, is a matter of no little importance.

4. The operation, thoroughly and properly done, is more likely to be effectual in relieving a reflex disturbance when such neurosis is due to a pathologic tonsil than is the more simple operation of tonsillotomy.

5. If thoroughly and properly done, and the case receives the proper subsequent care and treatment, it will leave a perfectly smooth surface in place of the tonsil, which result can not as certainly be attained by a tonsillotomy, and with ignipuncture it is a practical impossibility. With singers this becomes an important matter.

6. Pillars, which were for any reason previously hypertrophied, will ordinarily, after this operation, promptly retract to a more normal contour and size.

7. It is in some cases a practical operation where another would be almost or quite impossible; for instance in those tonsils which on the surface are so soft and degenerated that a firm hold on them can not be obtained by any instrument; to obtain satisfactory results these must be dissected out entirely.

I take it as a sufficiently established fact which practically every operator will admit, sooner or later, plainly or by inference, that total ablation of the entire gland is the indication in all cases where malignancy, lues or tuberculosis is eliminated with a reasonable degree of certainty, and even in these cases such is very frequently highly advisable. It is equally axiomatic that in chronic pathologic conditions of the tonsils local applications are practically useless, and that constitutional treatment, aside from those cases in which a special and well-pronounced indication for such treatment exists, is a wasted effort.

In a large number of cases where complete removal is performed, those evidences of follicular involvement which are so frequently seen in the pharynx and about the base of the tongue, and even an old adenoid, will disappear as if by magic. Indeed, it would seem that the marked improvement which so universally follows a tonsillectomy, or even very often a tonsillotomy, should be sufficient confirmation of the baneful influence such a pathologic condition may and usually does produce. It is not unusual for patients to voluntarily speak of the relieved condition of the throat even after the removal of a single gland has been accomplished.

The dangers of tonsillectomy, as compared with other operations for the relief of tonsillar hypertrophy, are greatly exaggerated by the profession generally. In an experience reaching over three and one-half years past, during which time I have removed the entire glands, by cautery dissection process, over three hundred times, I have not been unfortunate enough to meet with a single untoward accident. One of the most frequent objections urged against the removal of the entire tonsil has been the added dangers of hemorrhage; I am convinced, however, that this is a danger more imaginary than real. I have thus far had but one single case which required the least attention on account of hemorrhage. In that case ordinary styptics served to control the bleeding quite promptly. Such result I attribute, aside from a kindly fate, to the care taken in avoiding the wounding of the muscular tissues in the least possible degree, and as well to the fact that the cautery was always the instrument employed in effecting the removal. I have in this way fearlessly removed a number of large fibrous tonsils which I confess I would have long hesitated before attempting with either the guillotine or knife. I have on a previous occasion referred at some length to this process of operating, and I will consequently not enter into the details of the method as now employed.

To me a most convincing proof of the value of tonsillectomy as an operation is the unanimous satisfaction it affords the patients; and that after all is the ultimate criterion which must be the measure of our success in any practice.

That the removal of enlarged tonsils in children is advisable is a generally admitted fact, and requires no argument; but that even in these cases a partial removal of the gland is often advisable I must deny. If no other means be possible, then thoroughly curette the same after the use of the tonsillotome, scissors or knife.

The object of the paper is to call to your attention the fact that we will get by the removal of the entire gland when pathologic, in adolescence and adult life even more marked and surprisingly satisfactory results than in childhood. We will in addition be more closely following the precepts of consistent scientific surgery.

103 State Street.

DISCUSSION.

DR. F. J. QUINLAN, New York City.—As the essayist detailed the results of his observations, it occurred to me that we could mention the use of the cold snare, which I think a very valuable and safe adjunct to our present armamentarium. Some years ago Dr. Roe of Rochester gave us a very excellent paper in which he spoke of an affection of the tonsil unattended by hypertrophy, which is likely to at times give us much trouble. This small amount of glandular tissue gives rise to inexplicable symptoms and it is difficult to get at the cause. It is only by repeated examinations and by carefully separating the pillars that we can see this stroma, or rather this hardened tuft of tissue. This is the kind of tonsil that affects not only phonation, but frequently deglutition, and throws the soft tissues out of gear, so to speak. This small lymphoid collection, unless it is removed, may bring about acute and subacute conditions. The cold snare is of value in removing this, more especially since the introduction of the suprarenal extract, which we are all using today for its hemostatic effect. The use of the galvanocautery does not seem to me justifiable in these cases, but by simply throwing this tonsillar mass in view and getting the cold wire well down, then drawing it forward with the forceps, you can with this loop excise this tissue. The greatest amount of benefit often follows the enucleation of these little fibrous tufts. It is in these cases that you may inspect the fauces and be able to detect the cause of the trouble. The little crypts are often visible only on ablation of the tonsil. I only wished to mention the cold snare, though my experience in tonsillectomy does not warrant me in emphasizing its use and advocating it when other measures can serve us with safety.

DR. A. DEVILBISS, Toledo, Ohio.—I would like to ask whether the gentleman could make a tonsillectomy, as suggested by the Doctor, with the cold wire.

DR. QUINLAN.—I referred to tonsillotomy, Mr. Chairman.

DR. C. M. COBB, Lynn, Mass.—The snare that is made for tonsillectomy is rather large and heavy. It carries a No. 10 wire, and it is quite possible to do a tonsillectomy with it if you bend the wire around so you get a curve that falls behind the tonsil, and then work it carefully in. The caution I wish to give is that this instrument being so heavy, you are very likely to make some traction on the tonsil with it, and if you do you are very likely to have the neck filled with extravasated blood. The instrument is heavy and has to be handled with care.

DR. T. R. CHAMBERS, Jersey City, N. J.—If I understand the gentleman correctly, all his cases are tonsillectomies now in-

stead of tonsillotomies. I have done a great many tonsillotomies and a few tonsillectomies. After tonsillotomy I find many of these patients have as good singing quality as they had before. And I think issue may be taken with the writer in regard to all the tonsils that are hypertrophied being pathologic. I think it is very doubtful whether we can say that a tonsil, because it is a little enlarged, is a diseased tonsil. If it cuts off so much space that it gives us difficulty in breathing, then tonsillotomy is indicated. The operation of tonsillectomy, Dr. Coulter says, is not a serious one, but there are conditions under which I think it might be a serious operation. The tonsil must be put there for some purpose, and if it is partly taken away it still may serve its purpose, but that is not true if it is entirely removed.

DR. H. W. LOEB, St. Louis—This paper is an exceedingly timely one, especially in view of the work that has been done in the past three or four years, by which demonstration has been made of the fact that certain diseases enter the body through the tonsils. I believe it is claimed that muscular rheumatism as well as the acute articular form is due to toxins that find entrance in this way. There are cases going around the country to-day in which partial tonsillectomy has been performed and acute attacks of tonsillitis have been observed for years afterward. I recall a case of tonsillitis that occurred after every vestige of the tonsil was supposed to have been removed, and finally a small mass of tonsillar tissue was found to be remaining. In this case the dissection of the small remaining mass and the removal of practically all of it has caused the attacks to be lessened in duration and number, so that the patient has had only one attack in four months, whereas before they occurred every ten or twenty days. I found the only portion of the throat affected was the portion on which the small mass still remained. In 1892 I presented to this ASSOCIATION the first snare which I had the opportunity of devising. Since that time this electrocautery snare has been very much improved, until the present snare, mentioned by Dr. Coulter, which should be used whenever it is practicable, uses only a No. 5 wire. A complete tonsillectomy can be made without any particular danger to the patient. I thus save my patients, or think I do, not only the possible tonsillitis in the future, but also those diseases which may find entrance through the tonsils. It is only necessary to use a pair of forceps and pull the tonsil from its bed and take out the entire mass with the snare so the whole bed is as smooth as the rest of the palate. The healing is rapid. I am sure if this operation were more often used with instruments that have sufficient precision to warrant their use, the condition Dr. Coulter mentions would not be seen so often. I rise at almost every meeting of this ASSOCIATION to say about the same thing, and I have not had any reason for changing my opinion.

DR. J. A. STUCKY, Lexington, Ky.—I have been trying to agree with Dr. Coulter for two or three years. I have only done two or three tonsillectomies, and have not had the courage to do any more, for I have seen two or three people who have had the operation performed by men far more skilful than I, and they are sorry that they had it done. They complain of soreness and stiffness, and one declares that his voice is not of as high register as before. Whether there is anything in that I do not know. But I have found that when all the tonsil that could be engaged in the tonsillotome was removed, that has given relief. But I have not met any cases of recurrences when the gland was thoroughly removed with the guillotine. It does seem to me that we run some risk in removing the entire gland, and when there are adhesions I question whether we can do it without harm.

DR. JAS. H. FARBER, Dayton, Ohio—In many cases of enlarged tonsils, in fact those which most commonly present themselves to us, we find the tonsil scarred from repeated attacks of quinsy, irregular in form, its outline lost in the pillars, and adjacent structures hypertrophied so that it is difficult to determine which is tonsil and which is pillar. On close inspection we find several crypts; these I remove with scissors, trimming out as much tissue as the case will warrant. I would like to ask Dr. Coulter whether or not he believes there is a place for the snare in the cases.

DR. G. V. WOOLEN, Indianapolis, Ind.—I had the temerity to say before this Section, at the meeting of the ASSOCIATION in Cincinnati, in 1888, that I did not believe there was any such thing, anatomically or physiologically speaking, as a tonsil. I have since thought that I might have been mistaken at that time. I have made a persistent study of this subject. When we met in Philadelphia I again announced my belief that there was normally no such thing as a tonsil. Some gentlemen from Philadelphia took me to task and said that comparative anatomy taught that there was such a thing. The statement was rather a "stunner" to me, because I had not made a study in that direction. I am doing so now, and I do not know where they find proof unless possibly it be from a more extensive study of embryology than I have made. But in the study of comparative anatomy and physiology, which I am prosecuting now, I am becoming confirmed in the belief that we do not have, physiologically speaking, such a thing as a tonsil. If this dictum be true, then there can be no objection to tonsillectomy. As a matter of fact, I have yet to regret once having made a tonsillectomy. It has been my practice to remove all of the tonsillar tissue. I do not always succeed in removing all of it, but I always feel disappointed if I do not. All the ill effects supposed to be due to removing the tonsil are attributed to, and result from, disease in the nose. Thus, we often have pharyngeal trouble after removal of the tonsil, which has no relation whatever to the removal of the tonsil. If the nose is *first* put in good condition, we will not have any difficulty with these patients, if tonsillectomy is subsequently made.

DR. E. J. BERNSTEIN, Baltimore, Md.—I was rather surprised to hear the Doctor say that he did tonsillectomy with a guillotine and had no return. Am I right, Doctor?

Answer: Yes, sir.

DR. BERNSTEIN—Well, I have done the operation with the guillotine a number of times, and I have had a number of recurrences. I believe the tonsil to be an unnecessary and dangerous organ, and then the fact that the tonsil may be a focus of infection has been brought home to me in a very terrible manner during the past winter. I had a patient with a very mild tonsillitis, so mild in fact that she would hardly have paid attention to it at the time if I had not been treating a relative of the family. All that could be seen on one tonsil was only a slight erythema. I treated it with nitrate of silver. In a day or two she returned, saying the throat was as bad as ever. I made a culture and found the streptococcus. That is not surprising, for we often find the streptococcus when the throat is normal. But the young woman developed a streptococcus infection in a short time, and notwithstanding the use of the antistreptococcus serum, she died in a few days. In Baltimore, Dr. William Welch said, "There are streptococci and streptococci, as far as antistreptococcus serum is concerned;" the fact I got very little benefit from the antistreptococcus serum is not surprising, since it is usually prepared from the streptococcus of erysipelas, and the streptococcus we had in this case was not of that variety.

DR. A. DEVILBISS, Toledo, Ohio—The essayist said that tonsillectomy should not be made with the knife. I do not believe the operation can be made complete with the cold snare, and I believe that tonsillotomy will usually suffice.

DR. L. C. CLINE, Indianapolis, Ind.—I would like Dr. Coulter, in closing, to explain what he means when he says that his method will never cause bleeding. If there is a method not occasionally followed by bleeding, I would like to be familiar with it. In either operation we should group our patients and not rely on any single method, but select the method that best fits the case. We can often get good results with tonsillotomy followed by the use of the cautery knife to destroy any crypts that may be left; at least, that has been my experience.

DR. J. C. MCALLISTER—I wish to ask the age at which that was done.

Answer: Seven years.

DR. MCALLISTER—It is perfectly proper to do a tonsillotomy as well as a tonsillectomy. I find many persons who need a tonsillotomy or tonsillectomy, where there are adhesions between the tonsil and the anterior pillars. One of the speakers spoke of the use of the hot snare in removing these. I can not imagine, for my part, how he is going to do the snaring without previously dissecting the tonsil from the anterior pillar. For myself, I have a set of knives for use in these cases, to dissect the tonsil from the anterior pillar, and then I do a tonsillectomy.

DR. J. F. BARNHILL, Indianapolis, Ind.—It seems to me that the diversity of opinion as to whether we shall do a tonsillotomy or a tonsillectomy can be greatly simplified by remembering what we do the operation for. To my mind we do it to accomplish two things, viz., remove the obstruction that may be present, and remove the crypts that are always present. When the obstruction is great, or even considerable, and we wish to free the upper air tract, there is no other method simpler, safer or certain in results than tonsillotomy. The patient is almost certainly cured. In the second class of cases requiring the operation, where the tonsil is small, the kind that has been particularly referred to by the essayist and some of the speakers, we do not remove the tonsil on account of obstruction, but for the purpose of getting rid of the crypts. Any other method, as I take it, that will remove the glands beyond the bottom of these crypts will do all the good that can be done. I do not believe,

as has been intimated by some of the gentlemen, that it is necessary to leave any part of the tonsil in place. The tonsil is simply a part of the system of lymphatic glands, of which there are five or six hundred left if we remove this completely, and they are freely able to perform all the work that is done by the tonsil that we are at work on. So I always feel satisfield, and that my patient is cured, when I go to the bottom of these crypts and remove them.

DR. J. H. COULTER, Chicago—If I undertook to answer all that has been said it would occupy much more than my allotted time. In regard to the remarks by Dr. Barnhill, which I believe are positively incongruous with his practice and with his ideas of surgery, in that he says he will get perfect results by destroying a diseased crypt or portion of the tonsil, when the crypt runs up well under the pharyngeal aponeurosis, where you often find your greatest pathologic focus, how can you destroy that thoroughly, and yet leave a smooth pillar that will be free in its action to perform its function well, either in voice production or deglutition? I can not accomplish it. It would require a man with greater dexterity than I can display. Dr. Loeb and one or two others rather misinterpreted the purport of my paper, inasmuch as I had intended and had hoped that little or nothing would be said concerning the method to be employed. I am simply contending for a surgical principle. I do not use the snare very frequently. Dr. Loeb uses the snare, and uses it successfully. I have seen some of his patients, and he does get beautiful results from it. But certainly Dr. Loeb does not attempt to use the snare without first separating an adherent tonsil from the pillars.

You can not draw the tonsil into the snare if it is adherent to the pillars; it must first be loosened and made to stand out as a separate gland. I thoroughly agree with Dr. Woolen that normally there is no gland discernible. I can show you in this city, although I do not live here, a person on whom there has been no knife used, and yet I defy any of you to discover a gland there.

A MEMBER—You can see that in my throat.

DR. COULTER—Well, there are two instances. If now our proposition be true, and I believe it is, then if that tonsil does become discernible it is hypertrophied, and hypertrophy is a pathologic condition. One of the speakers asked if all enlarged tonsils are pathologic? I say yes, emphatically, because even if the crypts are not diseased the tonsillar tissue itself is diseased. I do not want to enter into a lengthy discussion of the method at this time, but Dr. DeVilbiss and Dr. Cline have forced the question so that I must say a single word. My method of doing tonsillectomy is with the cautery blade, because by that method I have an absolutely bloodless operation. By this process in over three hundred cases I have never yet had a very serious hemorrhage, and only one requiring attention. Time and time again I have removed an enlarged fibrous tonsil almost reaching the median line of the throat, and not had twenty drops of hemorrhage.

I remember all the objections to tonsillectomy, and I appreciate the criticisms that have been made, because they have brought out the fact that tonsillectomy is the proper surgical procedure if we adhere to the very first principles of modern surgery. There is no question about it. There is not a member present here who has advocated tonsillotomy, who would be willing to go before the surgical section and advise leaving a portion of the pathologic tissue intact in the body where it can produce such deleterious effects, as it is almost certain to do if left. I repeat it as a perfectly practical and feasible proposition that every operator who will begin the practice of removing the entire gland when pathologic will get results surprising to himself and gratifying to his patient, and will not soon return to the unsurgical operation of tonsillotomy.

DISEASES OF THE ANTRUM OF HIGHMORE: A STUDY OF ONE HUNDRED AND FIFTY CASES*.

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My apology for presenting the often discussed subject, "Diseases of the Antrum of Highmore," is the confusion among observers regarding the etiology and pathologic conditions found in these cases, as well as the discrepancy of opinions as to treatment. After an experience with 150 cases, 140 of which were in my own practice, I feel warranted in calling attention to a few points noted under my observation.

My cases have all occurred between the ages of 20 and 70. Forty-eight occurred in females and 102 in males. The disease did not predominate with any particular class of people—doctors, lawyers, ministers, teachers and tradesmen—in fact, all the callings and conditions in life were represented. Of the 140 cases, 6 had sarcoma, 3 in women and 3 in men. Two of these were operated on by the late Dr. J. W. Marsee, and in one of them the entire superior maxillary bone was removed, the other only partially, which gave only temporary relief from pain. The other four, when apprised of the nature of the disease, refused operation and finally succumbed to the malady. These cases all gave a history of suffering from their teeth prior to the development of the disease, which fact leads me to believe that the long-continued irritation from an abscessed root discharging into the antrum is a factor in the production of sarcoma.

Four cases of empyema of the antrum have come under my observation. The symptoms were the same as those described by Dr. D. B. Kyle in his cases—that of escaping gas from abscessed and carious teeth into the antrum, producing a sense of nasal pressure with paroxysms of a dull, heavy, sickening headache. These were all relieved by extracting or treating the diseased teeth.

The etiology of my cases could all be fairly well traced to three sources, viz: dental, nasal and la grippe. As nearly as I can estimate, 50 per cent. were due to diseased teeth, 40 per cent. to sequelæ of la grippe and teeth combined, and 10 per cent. to ethmoiditis and the various nasal obstructions. Probably a greater percentage should be assigned to la grippe complications. My estimates have been placed on the clinical history as given, which is often misleading.

Twenty cases were acute, complicated with influenza, and all subsided without operation. Of the other 120 all were chronic, suppurative cases of from two months' to seven years' standing. Operation revealed a marked swollen edematous condition of the mucous lining of the antrum in 16 of these. In none did I find true polypoid growths, as described in some of the text-books. Curettement was done in 6, and packing with iodoform gauze in 4 cases. The others yielded to hot astringent douches. Five cases were bilateral. Of the rest, 75 per cent. were on the right side. In trying to account for this, dentists and dealers in dental supplies tell me that a large percentage of the teeth and plates that are broken occur on the left side, which goes to show that there is more biting and chewing on the left side, thus favoring decay on the right. Ethmoiditis was observed as a complication in 11 cases, all of which were preceded by la grippe. Two cases that were carefully diagnosed would not submit to operation, and, so far as I know, they are still suffering from the disease.

The zeal of some of our dental brethren in crowning, building and maintaining bridge work, I am led to believe, is a cause of empyema, in some cases at least. The thought was suggested in 6 under my observation, having had to remove diseased roots under expensive bridge work before a cure could be effected. A purulent discharge from the antrum, when due to dental origin, is carious and fetid, but when its cause is from other sources, like the ethmoid and frontal sinuses, it is creamy and almost without odor.

For diagnosis I rely principally on the use of peroxid of hydrogen and the position of the head. After cleans-

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ing the nose and cocainizing, a few drops of peroxid are injected with a small syringe armed with a canula, the point of which is bent at a right angle and carried into the ostium maxillary. If pus is present, it will be manifest by the characteristic reaction. In cases of nasal obstruction or a deflected septum, I make an exploratory puncture with a small, sharp-pointed drill, through which peroxid is injected.

Illumination is less reliable and more complicated than the above method, although it is a useful aid in determining the condition of the roots of the teeth. I have come to believe, after trying the different methods of opening the antrum, that entering through the alveolar route is by far the best, for the reasons that the after-treatment is less painful, and the drainage is more complete, and the patient can, with greater ease and facility, keep the antrum clean.

Of the 118 cases operated on, all but two had one or more carious teeth, or they had already been removed. So that the objection to opening through the alveolar process on account of the teeth was reduced to a minimum.

My experience in puncturing the antrum from the outside under the ginglymoid fold has not been flattering. In every instance I had a swollen cheek from purulent infection from the discharge. The plan now followed in operating is to first enter the antrum with a small, pointed drill run by an electric motor, then insert a bit of cotton saturated with 10 or 20 per cent. solution of cocain well through the hole, which soon enables me to enlarge the opening to any required size. When a tube is required to keep the hole open, or food from entering, I use one made from silver wire turned to form a shoulder on the end to prevent its entering the antrum. The tube I now show you will remain where it is placed without anchorage, and the patient can remove and replace it at will. Some cases do better without a tube, using a plug of cotton instead, frequently changing it.

The time required to cure a case depends on the size of the opening and the thoroughness of the operation in removing all the carious teeth and nasal obstructions, together with thorough cleansing, curetting, packing and stimulating to healthy granulation. My cases have varied in the time required to effect a cure, from three weeks to one year, the average being from three to six months. Many cases will relapse and require reopening, after closing, on taking cold. For this reason, tonics and attention to the general health must not be neglected.

My practice has been to have the antrum thoroughly cleansed twice a day until the discharge lessens, then once daily until the discharge ceases, first using a little peroxid in water, followed by a solution of hot boric acid, or salt water; once or twice a week a solution of silver nitrate or iodin of sufficient strength to make an impression on the mucous membrane is injected. In the boggy, swollen, edematous cases the best results were obtained by using hot water injections three times a day with a little boric acid or salt added.

The so-called dry treatment by insufflating powders has not come up to expectations. The best results observed from the use of powders were by first washing the antrum clean, and then covering the membrane with equal parts of finely powdered boric acid and lactopeptin.

In tabulating cures, I find it difficult to keep track of all cases, as they are scattered over a large territory, some changing location. But, from my knowledge of the cases, a large percentage have been cured.

To summarize: The points I wish to emphasize are: 1. The great number of cases that are traceable to la grippe. 2. The absence in my cases of polypoid growths. 3. The greater predominance on the right side. 4. The importance of a good-sized opening, and the removal of all diseased teeth. 5. In my experience, to open through the alveolar process is by far the best. 6. Hot douching to relieve the edematous conditions. 7. The dry treatment alone after a first washing has not been a success in my hands.

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DISCUSSION.

DR. J. A. STUCKY, Lexington, Ky.—I do not think Dr. Cline need offer any apology for bringing this subject before our notice again. He has certainly given us an excellent paper. I am sorry he said nothing more than he did about the consequence of antral trouble. Most of the patients complained a little of pain in the cheek. I have had more patients complain of a peculiar heavy grinding pain in the occipital region than I have had complain of pain in the cheek, and nearly all of them complained of some nasal trouble. I am surprised to hear him say that in the chronic cases he has met with very little true polypoid degeneration in the antrum. I nearly always find it in these cases. I approve of the method he mentions of entering the antrum, going through the alveolar process and removing a tooth if necessary. As a rule we have a decayed tooth which we can remove, but if not I am in favor of removing a sound tooth. As to the cause of suppuration in the antrum, dental caries has a great deal to do with the production of this trouble, and next to this has been chronic trouble in the nose. In my experience, usually I have found a polypoid condition of the middle turbinated, and the secretion was simply dammed up without any drainage whatever. In nearly all the chronic cases, too, I have found that there is suppuration in the ethmoidal cells.

I recently had a very interesting case of osteosarcoma of the superior maxilla which puzzled several of us for five or six days, and I would like to report it. A coal driver was emptying coal into a cellar and a man received a shovelful of coal in the face. Two weeks afterward his face was swollen, and disease of the antrum was suspected. With the trocar and canula I found pus in the antrum. The man was etherized and the second and third molars removed without trouble, and about one-half an ounce of pus evacuated. I found the whole wall had undergone absorption, and microscopic examination showed the presence of an osteosarcoma. A week afterward a general surgeon removed the maxilla entirely and the patient died.

Now as to the dressing in these cases, I would be afraid to allow a patient to keep the opening closed with cotton. I object to a tube; I prefer gauze. In this connection I want to mention a case, for we learn by experience. I operated on a patient two years ago for antral empyema. The patient kept her antrum closed with gauze, but in a hurry one morning she put in too small a piece of gauze, which slipped into the cavity and she had a reinfection as the result. There was acute suppuration from the ethmoidal sinusitis following, and reopening of the antrum was necessary in order to remove the gauze tampon.

DR. T. H. CHAMBERS, Jersey City, N. J.—I would like to ask the Doctor if this is the average diameter of the tooth. In my experience that diameter is less than it should be in ordinary cases.

DR. JOHN H. MCCASSEY, Dayton, Ohio—Dr. Cline has certainly given us a very interesting paper. I would mention the use of peroxid of hydrogen in closed cavities or in small deep cavities to condemn its use. We know the peroxid of hydrogen in closed cavities causes gaseous formation and pressure on the adjacent tissues, and too often results injuriously. I would condemn the use of iodoform in this kind of practice—eye, ear, nose and throat. We regard iodoform in surgery as the skunk of surgery. Surgery would not suffer if iodoform was entirely abolished. I have long since dropped its use. Boric acid and nosophen and other drugs have taken the place of it. Last summer I had a case in which a man was upset in the river while crossing it with a horse and cart, and the horse kicked him on the upper jaw. He had a canine tooth that was diseased and I had it extracted. I could readily pass a probe up into the right antrum of Highmore, and I permitted it to drain through that opening. I wanted to operate on the other antrum, but the patient refused and went away a few months. When he returned I found the upper part of the malar bone was necrosed. I was able to bring away a large portion of the malar bone. There was an opening from the left antrum

through the cheek. I operated, scraping away all necrosed bone and the patient got well with five after-treatments. I mention reaching the antrum of Highmore through the canine tooth, which was only accidental, because the patient wanted the tooth out in order to get a new set of teeth. The shape and location of the antrum varies greatly. The portion of malar bone necrosed and removed was 1½ inches wide, and extended back over one inch. This space has been bridged over with fibrous tissue and the patient wears a plate nicely.

DR. C. R. HOLMES, Cincinnati, Ohio—Although I arise to not exactly agree on the point of operation, I do so with all due deference for the writer, for whom I have the greatest respect and of whose beautiful work I have long known. I am one of those who do not make the opening through the alveolar process, although I have done so in the past. I have no such record as Dr. Cline, and the number of cases he has treated is of importance. But when you can look into the antrum with a mirror, and curette it at any time, it is desirable. Instead of using gauze I have had flexible rubber plugs made, which are introduced into the opening. These are shaped like a wedge and cause almost no inconvenience to the patient. They can be taken out and sterilized by the patient as often as he chooses. My treatment is practically the same as Dr. Cline has given. I do not favor the introduction of gauze, when we can use flexible rubber plugs, because gauze is not so likely to remain in position. I am exceedingly glad to see this flexible wire drain of the Doctor's, but I am not willing to let the opening be made through the alveolar process. I would like to ask how the Doctor secures closure of the opening.

DR. E. J. BERNSTEIN, Baltimore, Md.—I would like to ask where the Doctor got the plugs?

DR. HOLMES.—I had a dentist make them for me in Cincinnati.

DR. S. E. ALLEN, Cincinnati, Ohio—We have two classes of antrum trouble, the acute and chronic. In the acute cases I suppose an opening anywhere, maintained for a few days or months, will bring about a cure. As to chronic inflammation of the antrum of Highmore, I have not been sure in my cases that the patient was cured, that is, that the cure would be positive and that there would be no necessitiy for again cleansing the cavity. It seems to me the only rational way, and that which makes the nearest approach to a cure, is to make a big opening into the antrum and clean it out and make a big opening into the nose. Even then suppuration may go on. But if you have a big opening into the nose, that cavity after a time becomes a part of the nose and you get the nearest approach to a cure. But even then, in my experience, these cases may have trouble afterward. I would like to know what percentage of old chronic cases make a really permanent recovery?

DR. GEO. C. STOUT, Philadelphia—I want to say a word in regard to the etiology of these chronic cases. I differ from Dr. Cline and rather lean to the side of Dr. Holmes in that I do not believe that these cases are due to carious teeth. In support of this view, a Russian in 500 post-mortems found 212 had carious upper teeth, but only two of these abscesses of the molars penetrated through the periosteum into the antral cavity. There are a few cases that are caused by carious teeth. Most of my cases have been caused by hypertrophied conditions of the nasal mucous membrane. Dr. Cryer has a very good specimen showing how a carious tooth might cause trouble in the antrum. The carious tooth is surrounded at its root by an osseous wall, formed there in the regular process of Nature to make a cure, and preventing any of the unhealthy material from entering the cavity itself. As to operation in the chronic cases, I prefer going through the canine fossa and then putting in a hollow tube, instead of a solid plug such as Dr. Holmes describes, the upper lip or cheek acting as a valve to prevent food particles entering the antrum.

DR. L. C. CLINE, Indianapolis, Ind.—There are some points I would like to make a little more clear. As to Dr. Stucky's suggestion as to the details of the symptoms, I took it for granted that most of you knew the symptoms and that we had gotten to the point where we knew we had trouble in the antrum and wanted to get rid of it. We could spend a whole hour on the symptoms alone. The first point is to make a diagnosis, and if there is any doubt about the case I put a hole into the antrum and inject a few drops of peroxid of hydrogen. As to injecting peroxid of hydrogen into a closed cavity, I do not have a closed cavity after I have made a hole into the antrum. It would be a mistake to use peroxid of hydrogen in a cavity containing pus, unless there were an opening into it. I have not attempted to present anybody's theory, but only my own observations. These cases have occurred in my practice and I have not found certain things that I have heard of being in the antrum, such as polypoid growths, etc. I did not find polypoid growths in any of the cases. There were edematous conditions found in some of them, which were relieved by hot astringent treatment. As to the size of the opening and the size of the tube I use, I made this tube only to show what it is. If I make a large opening I make the tube to fit the opening by using large wire, or if the opening is very large I do not need to use a tube. It is only in the smaller openings that the tube is needed. As to the position, I have tried these various methods and it may be my fault that I did not have success in opening through the canine fossa. My cases have gotten along very much better with the opening where the patient can clean it. My great difficulty has been to get patients to keep the antrum clean. By using an ordinary Davidson syringe, such as is commonly sold in the drug stores, by putting on a tube, they can pump through a sufficient amount to keep it thoroughly clean.

OPERATION FOR UNDESCENDED TESTICLE AND CONGENITAL INGUINAL HERNIA.*

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CHICAGO.

During the last year I have developed an operative procedure, first in connection with congenital inguinal hernia, and later in connection with undescended testicle, which has been very satisfactory in the few cases in which I have employed it, and which I believe is of sufficient value to warrant my reporting and urging its general adoption. As malformations in connection with the descent of the testicle, we find: 1, the rather common condition of congenital inguinal hernia, due to failure of closure of the vaginal process of peritoneum, and 2, the malpositions of the testicle, which might be divided roughly into three groups—*a*, within the abdominal cavity; *b*, in or about the inguinal canal, and *c*, in the perineum.

Cryptorchidism is not very uncommon, although the condition is usually concealed. Statistics of the Austrian army show one case in each five hundred men drafted for military service. Little attention has been paid to the operative treatment of this deformity in America. Formerly, when a cryptorchid presented himself to me for advice, I dismissed him with the statement that nothing could be done to correct the malposition, and I found from reading our standard surgical works and from conversation with my colleagues that this was the position almost universally taken. This deformity brings with it both mental and physical distress and dangers which warrant surgical interference for its relief—mental disorders, such as hypochondriasis and hysteria; physical dangers, such as hernia, inflammations from trauma, twisting of the cord and gangrene, and a great susceptibility to malignant degeneration.

For some years the teaching of most surgical authorities has been never to interfere with this condition unless urgent symptoms were present, and then to castrate. In the pre-antiseptic and pre-Bassini days, this teaching was undoubtedly correct. To-day, however, our ability to secure normal wound healing and the knowledge of the region involved, obtained from our experience in hernia work, has made this position no longer tenable, and I shall endeavor to show that the rule now should be to operate and transplant to its normal position in the scrotum every undescended testicle which can be palpated, whether it causes symptoms or not.

The malposition of the testicle is often complicated with hernia, and hernia of a very dangerous and distressing type. When the testicle is retained high up in the

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abdomen and does not reach the internal abdominal ring, a hernia is not very apt to coexist, but in one-half of the cases, where the testicle is in or about the inguinal canal, a hernia is present. It is difficult to retain such a hernia with a truss because the pressure on the testicle is unendurable and such pressure is apt to produce traumatic inflammation of the organ.

The malposition of the testicle appears from statistics to make it prone to malignant degeneration in a far greater percentage of cases than in the normal testicle. Zymanowski, who investigated this subject most thoroughly, comes to the conclusion that all retained testicles should be removed because of this danger alone. He was himself a monorchid and died of carcinoma of the retained testicle.

Statistics seem to show that carcinoma of a retained testicle is peculiarly malignant, as no cases of cure have followed removal, all cases dying within a short time of recurrence. I have had but one case of malignant disease of a retained testicle, a case of sarcoma. Castration was followed rapidly by a great sarcomatous mass in the abdominal cavity, metastases in the brain, and death.

A retained testicle in or about the inguinal canal is peculiarly liable to injury, both external injury from its exposed position and also injury from bodily movements, exercise of any kind in which the abdominal muscles are strongly contracted, sneezing and coughing. I have had one case in which the patient was compelled to remain in bed whenever he had a slight cold, because the pain of coughing and sneezing was excruciating. These injuries are followed, when severe, by the sickening sensation peculiar to a trauma of the testicle, nausea and sometimes syncope. Swelling and traumatic inflammation of the testicle may follow, and, if infection from without or through the circulation, occurs, suppuration and sloughing may result. As rarer complications of undescended testicle, hydrocele and twisting of the cord, followed by necrosis, might be mentioned.

One of the accompaniments of undescended testicle, which is seriously distressing to the individual in whom both testicles have failed to descend, is the fact that, as a rule, such testicles are sterile. Why this should be so is difficult to state, because in many animals the intra-abdominal position is normal; the fact remains, however, that most undescended testicles fail to develop and produce living spermatozoa.

I have very briefly stated the dangers and discomforts of the condition of undescended testicle simply to claim, as I do know, your consent to the statements that they are as great, if not greater, than those of ordinary inguinal hernia. We do not hesitate to offer a patient the benefits of an operation for hernia. Why should we refuse the cryptorchid the benefits of a surgical procedure which, if properly done, is as safe and as sure as a Bassini hernia operation, and which is of more value to the individual both from a physical and mental standpoint?

In pre-antiseptic days the treatment of undescended testicle was mechanical. An attempt to bring the testicle into position by pulling and pressing the organ into the scrotum, or the continuous pressure of a truss above the testicle when this could be employed; or when these means failed, which they almost always did, either dismissing further effort, or castration. A few attempts were made to transplant the testicle into the scrotum by a cutting operation, but these failed because of ignorance of the surgical anatomy necessary to unravel the malformation and malposition, or because of infection. Such treatment did not find adherents, because of the bad results, and was never admitted to the position of a standard procedure.

Soon after the general introduction of antiseptic surgery into German clinics, Max Schuller, then in Greifswald, published in the *Centralblatt,* and also in the *Annals of Anatomy and Surgery,* the description of an operation which he had made for undescended testicle, in which he laid the foundation of a surgical procedure, correct anatomically, in that he recognized the chief factor which prevented the drawing of the testicle down into the scrotum and the factor which drew the testicle back into the old position after operation. This factor was the peritoneal prolongation extending from the general peritoneum to the tunica vaginalis; that after division of this vaginal process it was possible to bring the testicle down into the scrotum without tension. He stitched the testicle to the bottom of the scrotum. His patient made a good recovery and, as he reports, the small undeveloped testicle rapidly increased in size.

Following Schuller, Nikoladoni, Kocher, Czerny and Ziebert in Germany, and Tuffier, Richelot, and a number of other French surgeons have developed the operative treatment of undescended testicle. In Great Britain and America little work of this kind has found its way into the literature, so little in fact that my attention had never been called to the work already done along this line until after I had developed the technic which I am about to report.

In the first place, I desire to refer briefly to the best method of handling the vaginal process of peritoneum in operations for congenital inguinal hernia. I have until recently been in the habit of obliterating the vaginal process in these cases by a purse-string suture at the internal ring, and by whipping up the peritoneum around the cord with a continuous catgut suture, leaving enough to form a tunica vaginalis. I did this because of the great difficulty I had experienced in separating the vaginal process from the cord. I found in one case in which I had done this, that the testicle was dragged high up, almost out of the scrotum, by the subsequent contraction of the vaginal process.

In a careful dissection of the case of inguinal hernia, I found that although it was very difficult to separate the vaginal process from the cord proper, when I opened the inguinal canal widely, so as to expose freely the internal ring, I could very easily separate the peritoneum from the cord just where the cord separates into its constituent elements, i. e., where the vas turns inward and downward and the spermatic vessels pass upward. Here I could readily separate and cut off the vaginal process and close the abdominal cavity as in treating the sac of an acquired hernia. Further, I found that by following the vas and spermatic vessels inside of the abdominal cavity with my finger, and freeing them from the peritoneum covering them, I could pull them a surprisingly long distance out of the abdominal cavity. Since that time I have had the opportunity of operating on four cases of congenital inguinal hernia which I have handled in this way, by an incision three inches in length over the inguinal canal, splitting up the entire length of the canal, freely exposing the internal ring, opening the vaginal process, freeing the vaginal process very high up where the vas and spermatic vessels separate, ligating the vaginal process with catgut at the internal ring and dividing half an inch below the ligature, then, without stripping the vaginal process from the entire length of the cord and without removing any of it, throwing a catgut ligature around it and ligating it so as to close it, forming a large tunica vaginalis.

In operating on undescended testicle, whenever it is palpable about the canal, I have pursued the following technic: Incision three inches long over the canal; the incision should never involve the scrotum. It should never extend farther inward or downward than the external ring. If the testicle is in the canal, split the canal open the entire length by division of the external oblique, draw out the testicle by dividing all the covering over it down to the peritoneum, run the finger along the vas and carefully separate the peritoneum from the vas for two or three inches within the abdomen, run the finger along the spermatic vessels, and in the same way carefully free them from peritoneum. Now separate the vaginal process from the cord high up, ligate the peritoneum of the internal ring, and divide the process half an inch below the ligature, remove all the coverings from the cord, so that the testicle hangs suspended by the vas and the spermatic vessels. It is surprising to find how movable the testicle now becomes. It can be readily laid on the thigh several inches below Poupart's ligament. The index finger is now carried into close contact with the external oblique over the crest of the pubis into the scrotum, and with the blunt dissection of the finger a large pocket is made on that side of the scrotum for the reception of the testicle, great care being taken to make the opening of the pocket only as large as necessary to admit the testicle. The very freely movable testicle is now carefully slipped into the scrotal pocket, where it remains without tendency to retract. The testicle is not sutured to the scrotum, such suturing being of no value in preventing retraction, simply adding the risk of complications. If the testicle has been properly freed, it becomes at once evidence that such suturing is superfluous, and if the testicle has not been freed sufficiently and can not be retained in the scrotum without suture, then one may be sure that it will retract in spite of such suturing. The inguinal canal is now restored as in a Bassini operation for hernia, or what is probably better a Bassini operation without transplantation of the cord, which Senn advocates as preferable to a Bassini and which Ferguson of Chicago described as the typical hernia operation. After the closure of the canal and external ring there still remains one of the most important steps of the operation, i. e., the sewing of the deep layer of the superficial fascia to the aponeurosis of the external oblique by means of fine buried catgut. This is done throughout the operative field, over the inguinal canal, and well down over the pubic crest to the neck of the scrotum. The object of this step is to obliterate the areolar space between the superficial and deep fascia in front of the external ring. It is in this space that the testicle retracts in case of recurrence of the malposition.

I have in this manner operated on four undescended testicles, one double and two single cases. In all of these cases the freeing of the testicle was easily accomplished after the manner above described. In all cases the testicle could be laid on the anterior surface of the thigh three or four inches below the external ring. All of the cases had open vaginal processes practically, therefore congenital inguinal hernia. In but two, however, was the existence of hernia made manifest by symptoms. In the two single cases there was an abundance of scrotal tissue and no difficulty was experienced in making the scrotal pocket. In the double case, however, there was absolutely no scrotum, in the sense of a pouch, before the operation. The skin was perfectly flat from the root of the penis to the perineum, but was thrown into transverse ridges by the muscle tissue of the dartos. After freeing the first testicle it was found that this tissue could be very freely stretched and a good-sized pocket was made with the blunt dissection of the finger. After the double operation had been completed—in this case the testicles were almost normal in size—the scrotum looked like some of the cases where a very extensive amputation of the scrotum is made for varicocele. The operative wound in all cases healed by first intention, and in none has there been any tendency to retract. The three patients operated on were about the same age, one 20 years old, two of 21. I believe that the age of selection for this operation would be about 15, or, better, let us say, immediately after the age of puberty. It is possible, however, that a more extended experience will select the period before puberty, from 8 to 12. Not one of these was more difficult to perform than a simple Bassini hernia operation. The results have been satisfactory. I might add, I have never had more grateful patients. The condition for which the operation was performed was certainly of more moment to the individual than the existence of a simple inguinal hernia.

As results of the operations, the patients were freed from hernia and dangers of hernia. The testicle was placed in its normal position where it is probable it will develop into a normal testicle. The testicle was removed from an exposed position where it was subject to trauma and inflammation, and it is probable that after such an operation the testicle will be less likely to become the site of malignant degeneration than if allowed to remain in a position where it was constantly subjected to trauma. This operation is to be preferred to castration, as it saves the testicle for the individual. Aside from the mental value of such saving, it is not improbable that the addition to its function of producing spermatozoa, the testicle, like all other glandular organs, produces certain compounds which are of value in the normal life processes.

Because of the benefits produced by this operation; because of its safety; because of the dangers incident to the deformity, I would urge the general adoption of the operative treatment for the relief of these patients. Certainly, in the light of our present knowledge and skill we can assure these patients that an operation holds out to them a reasonable prospect of cure, and that the dangers of a properly conducted operation are far less than those of the continuance of the deformity.

DISCUSSION.

DR. SAMUEL E. MILLIKEN, Dallas, Texas—I am glad to have heard Dr. Bevan's paper, as the subject of undescended testis is one of particular interest to me. At the Detroit meeting in 1892 it was my pleasure to report a case and demonstrate the operation, which was performed on a patient suffering from congenital hernia. Dr. Bevan goes a step further in that he enters the abdominal cavity for the purpose of loosening up the attachments to the spermatic cord. This operation is thoroughly scientific and justifiable. The ages of the patients on whom I have operated range from 8 to 20 years, but I prefer to operate at about 12 or before puberty. The case reported to this Association in 1892 was one of retained testis and strangulated hernia. Bassini's method of reconstructing the inguinal canal was employed, and after all the cremasteric fibers had been relieved, the testis was easily brought into the scrotum and anchored by passing a single catgut suture through the partially obliterated tunica vaginalis and scrotal walls. The organ remained in the scrotum and the patient was subsequently presented to my class at the New York Polyclinic.

DR. J. P. LORD, Omaha, Neb.—Those who are in the habit of attending medical meetings are wont to state that it always pays financially. I shall go home now and will enter into correspondence with a number of cases of this kind which I have turned off, thinking that operative interference was not practicable. I want to call attention to an etiologic factor in the production of this condition. I have in mind a case that came to me a couple of years ago, a man of 42 years of age, who reported that he had normal testes, as he supposed, that is, they

were normally located until he had a very severe attack of parotitis, with metastatic inflammation of the testicles. At that time the testicles retracted to within the canal; they continued to remain there and because of their presence in that locality he was continually subjected to attacks of inflammation which rendered him perfectly incapable of pursuing his vocation as a farmer, it being necessary for him to remain in bed. This man consulted me for an operation. I laid the matter before him, stating that I thought the removal was the only feasible thing, if he would consent to it. I think this operation of Dr. Bevan's would be applicable to that man, that there would be relief for him. This case was entirely novel, as far as I know, in producing these anomalies independent of the congenital conditions.

DR. M. L. HARRIS, Chicago—The main point on which I wish to say a few words is the time that the operation should be done. There are two factors here involved—the first one is the necessity of an operation, and the second is the functional capacity of the organ. I do not think it is advisable to operate on these cases previous to the age of puberty. It is well known that the testicles may remain in the canal until puberty and then descend. It is impossible to say when a testicle will descend previous to the age of puberty. Lauenstein has reported a very interesting case in this connection. In a youth with double retained testicle, one side was operated on previous to puberty. The patient left the doctor, returning after puberty, when much to his surprise he found that the testicle on which he had not operated had descended into the scrotum nicely; the testicle he had operated on and replaced had again retracted, and he had in addition an inguinal hernia on that side, which had not previously existed. So I can not agree with Dr. Milliken that these cases should be operated on before puberty. These testicles do not lose their functional capacity because they are retained, but they are retained because there has been imperfect development from the beginning. I have removed a number of retained testicles after puberty in patients from 20 to 30 years of age, and in every case that had gone beyond the age of 25 no living spermatozoa could be found in these testicles; every one of them had become incapacitated for producing living spermatozoa. Such has been the experience of a number of observers who have made microscopic sections of these cases. This means that if cases are to be operated on at all it must be done early, that is, immediately after the age of puberty. At this time many of these testicles do retain some functional capacity, and the aim should be to preserve, to every extent possible the little functional capacity which these organs possess. Therefore, I would make the point that these cases should not be operated on until the age of puberty, and then operated on as early as possible.

DR. L. L. MCARTHUR, Chicago—I have under my care three cases that I have operated on for this trouble, one with double and two with single undescended testicle. No testicle should be extirpated until a reposition of that testicle in the abdominal wall, extraperitoneally, has been tried; if it is feasible when the testicle can not come down, that such a testicle should be dropped into the pouch outside of the peritoneum within the small pelvis. This is easy of accomplishment for all these in which we have to do a Bassini to correct the dilated inguinal canal any way, and would be easy of performance where the dissection had been made. The presence of such an organ is possible and it is inexpedient to remove it until reposition has been tried. In two cases in which I found it was impossible to bring it down satisfactorily, even by loosening up the epididymis from the testicle and dropping the testicle down, still the length was not sufficient to bring it with the hope of its remaining in the scrotal position, and in these cases I have put them back, and after a lapse of two or three years there has been no complaint on the part of the patient.

DR. R. C. DUGAN, Eyota, Minn.—Would Dr. Bevan make no distinction as to time of operating between those cases attended with and those without hernia? In other words, would he put off a hernia operation to a later date on account of an undescended testicle?

DR. F. C. SCHAEFFER, Chicago—The remarks of Dr. Harris are well taken. I recall the cases of four children who had undescended testicles, between the ages of 7 and 11 years, two accompanied by hernia. They were kept under observation, and in all of them, by the age of 18, the testicle had descended and the hernia also disappeared. Judging from this experience, I am satisfied that the operation should not be done until the time of puberty, excepting for special reasons.

DR. A. I. BOUFFLEUR, Chicago—I had a case two weeks ago illustrating the anomalies of position of undescended testicle. I do not know that you would class it as an undescended testicle, because it had descended through the inguinal canal, but had been displaced on to the abdominal wall in the groin. There was an accompaniment of a congenital hernia. This patient was a typical hypochondriac; and completely incapacitated from doing any work. At one time there had been an attempt made to retain the hernia with a truss, and you can appreciate what the effect was on the testicle resting on the external oblique muscle. I wish to mention it to condemn the practice of applying any truss to a hernia accompanied by a supposed undescended testicle. They are not all undescended testicles, but simply a testicle that failed to descend into the scrotum, as this case demonstrated. In this particular case I was very much pleased to find what could be truly said to be a beautiful appearance of a normal development of the vas deferens with a displaced testicle, fully three inches of the vas deferens knotted up in a condition like a varicocele; the different coils had to be dissected apart. The operation was made not unlike that of Dr. Bevan's, and the testicle was readily placed into the scrotum and retained there. The peculiar position is one which should not be overlooked.

DR. THOS. H. MANLEY, New York City—One word has been suggested to me by the remark of Dr. Bevan, and it is one of very great importance, that is with reference to the application of a truss in these cases. Dr. Harris has spoken about the etiologic factors in operation. In the most of them his position is, no doubt, correct. The causes of ectopic testicle are dependent on arrest of the descent of the testicle. My experience is that it is dependent on other causes also, and that the most prolific in many is an improperly constructed or a prematurely adjusted truss. As a matter of fact, during the first year in a great many children the vaginal process is not completely closed. The cremasteric muscle possesses the power of dragging the testes up into the inguinal canal. You take a case of this kind, complicated, at least, early in life, with a small hernia, the testis with a tendency to glide up and down the inguinal canal, and you apply a truss and lock the testis in the canal, and you provoke an adhesive inflammation, you may reduce the hernia but you have fixed the testis, you have artificially brought about a condition of monorchism. My experience has led to the opinion that if the hernia is not large, in those cases we had better leave them alone until after puberty, because, there is no doubt that a considerable number of the cases tend to undergo spontaneous cure. If we have an enlarging hernia present, however, and we perhaps will in a certain percentage of these cases, then comes the question as to what to do. Then, unless there is a large or irreducible hernia, we would better not do anything but wait, as the tendency of infantile hernia is to undergo a spontaneous cure, the hernia tends to ascend and the testis to come down. If the case has gone along until after 21 or 25, and there is no disturbance, it is a question in my mind whether we are justified in doing anything. On the other hand, if we have evidence of irritation, the testis possibly taking on degeneration or malignant changes, it is another matter. Then, the thing to do, assuming that the position taken by Dr. Harris is correct, with those passing beyond the age of puberty—the functional capacity of the organ *nil*—is not to bring the organ down, but do a castration. The operation recommended by Dr. Bevan is one involving an extensive dissection, one that should not be undertaken by a person not well skilled in anatomy, and one which, if not performed with great care, would be apt to leave a tendency to hernia—a hernia very difficult to manage. I would like to have Dr. Bevan tell us how he does a Bassini operation. He says those cases can be treated by the Bassini operation *without* obliterating the inguinal canal.

DR. R. HARVEY EEED, Rock Springs, Wyo.—The sum and substance of this matter is: What benefit are we going to get from an operation of this kind or for any operation for the relief of a retained testicle? My experince has been that in the large majority of these cases, the organ has become atrophied and worthless. It seems to me that the principal object in surgery is to give not only relief, but to derive some benefit, and the only benefit that I see in the majority of these cases, if operated on after puberty or after the age at which there is recognition of the existence of a testicle, is to convey to the mind of the patients that they still retain their testicle. As to the actual benefit derived, I question it very much. In the majority of cases in which I have operated for undescended testicle, I have found many of them degenerated beyond all hope of restoration. In others I was unable to bring the testicle down on account of a contracted and thickened cord, which would not permit the testicle to descend. It has always been my rule to bring the testicle down if possible, but, if I failed to do so, I removed it, for in many of these cases the surrounding tissues would become thickened and give pain to the patient, subsequently requiring a castration for the relief of the pain.

DR. A. D. BEVAN, Chicago—I desired in reading my paper to present the subject and emphasize the surgical connection

of the parts involved. It is quite difficult to describe any operation clearly as in a hernia operation, with words, and I have a number of plates which I believe will give one a better idea of the operation than any description. I recommend the age of 15 or roughly putting it in that way, just after puberty, and I am glad to find that the majority of the gentlemen agree with me in adopting that age, because of the possibility at any time up to 15, or after 15 of the testicle itself descending. I would not delay an operation for hernia until 15; if the undescended testicle was accompanied with hernia we should do the operation at once. As to the statement of extensive mutilation, the operation involves practically just the same region and almost the same structures as are involved in a Halsted hernia operation. We do not consider *that* a very extensive operation. The cases that I have operated on have a small hernia occurring high up on Poupart's ligament, just as in a modern hernia operation. Dr. Manley asked me in regard to doing this operation as a Bassini operation, without transplanting the cord. I should say to him that Dr. Ferguson, in his description of a typical operation, does what I described as a Bassini operation, without transplanting the cord—opening the canal, leaving the cord in place, stitching the conjoined tendons of Poupart's ligament over the cord. The cord is left below the conjoined tendons in the normal position. Then over this closure of conjoined tendons and Poupart's ligament, the suture of Poupart's ligament and the external oblique as in a Bassini operation. This is done by a number of men to-day.

CHLORETONE[1]: A NEW HYPNOTIC AND ANESTHETIC.

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Chloretone, acetonchloroform, or trichlor tertiary butyl alcohol, has, according to Willgerodt, the following formula:

$$CH_3$$
$$CCl_3—C—OH.$$
$$CH_3$$

It is formed when caustic potash is slowly added to equal weights of chloroform and acetone, and may be isolated from this mixture, after the removal of any excess of acetone and chloroform, by distilling with steam. Obtained in this manner, it is a white crystalline compound, having a camphoraceous odor. When freed from water by melting, and allowed to cool, the camphoraceous odor is more pronounced and its general appearance resembles camphor more closely. It is very soluble in chloroform, acetone, strong alcohol, ether, benzin, and glacial acetic acid, sparingly soluble in cold water (1 per cent.), more soluble in boiling water. Dilute acids and alkalies are apparently without effect; concentrated sulphuric acid decomposes it. When purified by distillation with steam or when recrystallized from water, it melts between 80-81 C.; when freed from water, readily accomplished by distilling, it melts between 96-97 C.; and boils at 167 C. (Willgerodt). At body temperature it sublimes in the form of beautiful white needles.

If chloretone crystals or the tablets containing the substance are administered to animals, per stomach or rectum; if a solution is given per stomach, per rectum, subcutaneously, intravenously, intra-abdominally, or if the animal be confined in a tight box and compelled to inhale air saturated with its vapors, all degrees of hypnosis to complete anesthesia may be produced, lasting from a few hours to several days, depending on the amount of the substance entering the system, the animal finally recovering in excellent condition if the dose is not too large. However, when an extremely large quantity of the drug is administered the animal remains completely insensible for several days, the respiration becomes slower and weaker, finally ceasing altogether, the sleep of anesthesia terminating in the sleep of death. When administered per stomach, more quickly when followed by considerable water, chloretone passes rapidly as such into the circulation, and is distributed as such throughout the body. The spectroscope fails to show any effect of the drug on the hemoglobin of the blood even after exceedingly large doses have been administered.

The pulse-rate is slightly lessened, but the action of the heart, under the influence of chloretone, remains excellent until the organism begins to suffer from a lack of oxygen. Frogs are very quickly overcome by the action of the drug when it is applied in vapor or liquid form. The local application of aqueous solutions of chloretone to the laid-bare frog's heart produces slowing of the rate and a more complete contraction of the organ, reminding one of a digitalis heart.

Kymographic tracings taken from the carotid artery of dogs show that blood-pressure usually remains unaffected, in several instances the pressure being a little higher at the end of an experiment occupying six hours than at the beginning.

The amplitude of the contractions of the ventricle as recorded by the myocardiograph remains constant for many hours. (See tracings.)

The main action of the drug is confined to the central nervous system, it being essentially the same as that of the other anesthetics and hypnotics of the fatty acid series, differing from most of the members of this group in not depressing the circulatory system. Chloretone, besides its central action, possesses local anesthetic properties in a marked degree, resembling cocain in many respects. Indeed, it will probably be found a useful substitute for the last-named drug, as the small amounts introduced subcutaneously to produce insensibility to pain in surgical work are entirely harmless.

Experiments *seem* to warrant us in making the statement that chloretone has a selective action for the central nervous system—more chloretone having been found in the brain in several instances than in any other organ of the body.

Blood serum and other organic fluids are preserved for an indefinite time if saturated with chloretone, a little more than .5 per cent. of the substance being dissolved. Culture experiments with various kinds of bacteria also prove that chloretone possesses considerable antiseptic properties.

We would naturally expect, since chloretone is volatile at even ordinary temperature, and since it circulates in the blood, that it would be eliminated by the lungs. Carefully conducted experiments thus far have failed, however, to detect it in the expired air. In any case it must be eliminated in very small quantity. Even after very large doses have been administered, chloretone has never been positively recognized in the urine of animals, neither has acetone nor chloroform been detected with certainty. The chlorids in the urine of a dog fed on a fixed diet are markedly increased after the administration of chloretone, and remain high some days after the discontinuance of the drug. It seems probable that chloretone is decomposed—or burned down in the body—this view would accord best with the facts that we have already observed.

[1] In order to avoid confusing this subject with "acetone chloroform" (a name which has been applied to chloroform made from acetone), we have deemed it advisable to use the name "Chloretone."

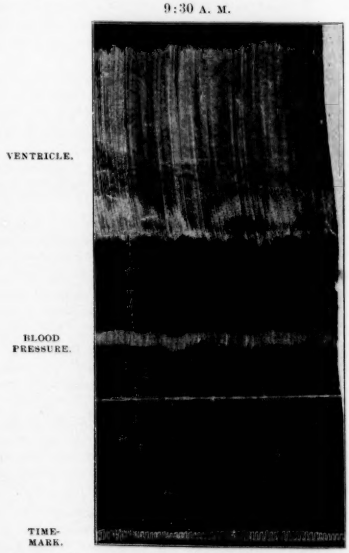
During the past few months chloretone has been quite extensively employed clinically. From our own experience and that of numerous other observers, we may briefly outline its therapeutic properties as follows:

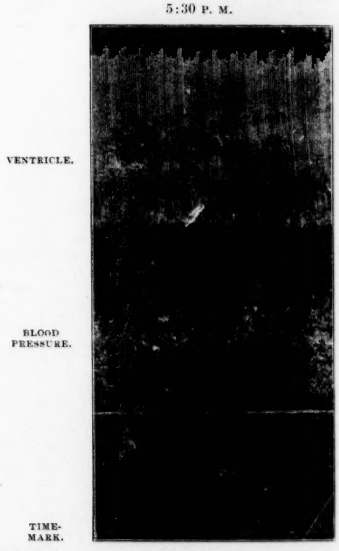
In cases of lacerated wounds, burns, etc., it is very efficacious in lessening pain when the injured parts are freely bathed in aqueous solutions of the drug. Owing to its antiseptic properties, it may be used independently as a surgical disinfectant, or if a strong antiseptic action is desired it can be employed in conjunction with mercuric chlorid, carbolic acid, etc. Pain and uncontrollable vomiting of gastric origin may frequently be relieved very quickly by its internal administration. In one instance the drug proved especially useful in checking the persistent vomiting of gastric carcinoma. It may be possible that the drug will prove to be a useful therapeutic agent in preventing or controlling sea-sickness, vomiting in pregnancy, etc. Laboratory experiments quite conclusively show that it renders the mucous membrane of the alimentary canal insensible to irritants. Mustard, when given in an aqueous solution of chloretone to dogs, fails to provoke emesis, the animal usually going quietly to sleep. That the mustard produces the usual amount of irritation is shown by the fact that if on the following day the animal is killed and the intestine examined, its walls are found much inflamed, the parts coming in contact with the mustard in some instances being nearly vesicated.

As a hypnotic, chloretone is frequently efficacious in various conditions. Especially good results have been obtained from the exhibition of the drug in cases of persistent insomnia in the aged; cardiac disease with renal complications accompanied by high arterial tension. In many instances where morphin, chloral, trional, etc., have been unsatisfactory, chloretone has been successful. Morphin, as is well known, increases the excitability of the nervous system when administered in large doses, and is frequently objectionable on this account. Chloral is quite irritating to the stomach and depresses the heart's action. Chloretone does not possess any of these disadvantages, being only rarely followed by disagreeable after-effects. Occasionally, when large hypnotic doses have been given, drowsiness occurs on the following day.

In general we may summarize our claims for this drug by stating that its action on the central nervous system is similar to the anesthetics and hypnotics of the fatty acid series without depressing the centers of the medulla; locally, it acts like cocain, as a peripheral anesthetic.

It is too early to prophesy what position chloretone will take in medicine, but the results as a hypnotic and local anesthetic are very encouraging. As high as 60 grains have been given at one time, without producing any untoward symptoms. From 6 to 20 grains given in tablets at a single dose, followed by a drink of water or milk seem to be quite sufficient to produce the desired results. Possibly the drug will prove to be a useful general anesthetic when administered in large doses; or it may be given before chloroform or ether and allow complete anesthesia to be produced by the use of a minimum amount of chloroform or ether. Perhaps such administration may prevent the annoying vomiting that so frequently occurs when a patient is being anesthetized. Chloretone is nearly an ideal anesthetic for use in experimental surgery, physiology, pharmacology, etc., as has been abundantly demonstrated by Abel of Johns Hopkins, Cushny of Ann Arbor, and our own experience in the laboratory for several years past. About .2 gr. per kilo body weight is the proper dose for dogs, where it is intended to keep the animal alive; if, as is frequently the case in physiologic and pharmacologic work, the animal is not allowed to recover, much larger doses may be given without interfering with the experiment. We have nearly completed an exhaustive systematic investigation of the chemical and pharmacologic properties of chloretone, which will be published in detail in the near future.





THE DOUCHE.

ITS RISE AND DECLINE, BUT PRESENT RESTORATION.

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Until 1894 obstetric opinion scarcely doubted that the douche was advantageous as a prophylactic measure. Till then the clinician pointed to his improved statistics as proof positive. Döderlein and others reported, from bacteriologic examination, that the vaginal secretions contained micro-organisms, pathogenic, non-pathogenic but corrective, and some whose functional possibilities could not be interpreted. The conclusions followed that the prophylactic douche of the clinicans seemed also to be substantiated by the bacteriologists. For they stated that the vaginal secretions were not sterile, therefore were not sufficiently bactericidal in function; auto-infection, its probability more especially, seemed proven, and in no small degree, because of the presence of these latter non-interpretable germs. It could not be said they were indigenous, or of external origin, or that they were external germs arrived in the vagina, and had given origin to a new form, which remain in this quiescent, uninterpretable state, waiting for a favorable occasion, like labor, to develop into a more mature organism with probable pathogenic properties.

These questions could not then be answered, nor were they afterward, nor have they as yet been successfully solved. Clinically and bacteriologically, until Krönig appeared in 1894, Ahlfeld's auto-intoxication seemed justified; the prophylactic douche, though questioned by some, was quite generally adopted.

Similar in tone and conclusion to Gönner, who had previously (1887) reported that "the vaginal secretions of thirty-two pregnant women did not contain pathogenic organisms usually found in puerperal infection, that auto-infection was not possible, that the prophylactic antiseptic douche was not necessary," came Kronig's articles in 1894, with the startling assertions that the other fellows were all wrong in their conclusions, because they were based upon incorrect technic in bacteriologic research; that the vaginal secretions of pregnant women, acid, alkaline or neutral, were free of pathogenic germs; that the secretions possessed bactericidal properties; that to remove them was unwise and harmful; therefore, the obstetric world was wofully in error that it continued to douche; last, but not least, Ahlfeld was disproven. Shortly afterward Menge reported a similar testimony as to the properties of the vaginal secretions of non-pregnant women, that they were bactericidal, but to a less degree than in the pregnant, and showed with experimental vaginal inoculations of pathogenic germs that such germs, without the douche, met with a more timely neutralization in the non-pregnant vagina than when the douche was previously used.

From Döderlein to Williams these assertions were indeed startling; they stunned. Before this statistics; discussion in congress and society; technique, all and everywhere, scientific expression vied with each other to testify to the beneficial effects of the douche. Auto-infection, championed by Ahlfeld, though struggling in the throes of doubt, had held its own among the probable probabilities. Alas for all this heralded philanthropic achievement on the part of the obstetrician, Krönig's conclusions, apparently supported by Menge's work, seemed to act like a cyclone, uprooting previous doctrine. The majority of obstetric thought fell prostrate before them. This is no reflection on the majority or their weak-kneedness, or of the profundity of their previously asserted comparative clinical observations and deductions. No, they were all that; I envy only Krönig and his wonderful victory! For by one man, controlling but a comparatively speaking not-great clinical field, coming upon his opponents in the full daylight of scientific struggle, as if with a breath of air, like Sennacherib's hosts, they were laid prone, paralyzed—but few remaining to bear the tale, all embarrassed to hold high the head!

Whether right or wrong—for this year's (1899) German Gynecological Congress throws great doubt upon the accuracy of his views—Krönig must ever be complimented with the laurel of so successful a *coup d'etat* in the amphitheater of scientific controversy, and that, too, in the presence of overwhelming antagonistic scientific thought; a stroke rarely offered and rarely achieved! As a gladiatorial feat, bravo, Krönig!

Döderlein, the mighty, wavered; he surrendered the prophylactic douche; he seemed bewildered as to the judiciousness of the douche as a whole. He was not alone. Williams accepted Krönig's suggestion that his bacteriologic investigations of 1893 were technically wrong—naturally his conclusions. In his new series, reported[1] in 1898, he, truly gentle, acknowledges his error, and again offers a new series of conclusions, that vaginal douches are not necessary, and are probably harmful; auto-infection is possible from bacteria in the vagina in very rare instances, etc. All this because of a *single* charge of "error in bacteriologic technique." Where was their strength, which was theirs by right of comparative clinical results? Judging from previous bacteriologic experience, who knows that the morrow will not bring forth another bacteriologic David, whose sling will contain a mightier bacteriologic technic, which will again lay prone? Verily, verily, consistency, thy name is not alone gynecology.

The majority soon discarded the douche—at first, the prophylactic, then the douche altogether, reserving its use for operative and necessary cases only. Now, it appears to the writer that the moment the new departure did so reserve its use for the operative cases, they acknowledged as true all they claimed was not true. Why, then, so consistently douche, when operating with forceps, turning or other hand and instrument-invading operations, where skin and instrument contact with infection possibility, is a prolonged one, if secretion is sterile and bactericidal; douches harmful; in rare cases only can there be auto-infection. Does not the very fact that they recommended the douche in these cases prove their lack of faith in their own conclusions? The very fact that they recommended the douche in operative and necessary cases shows that they admitted that the douche does possess virtues? If the douche is harmful, why did they wash away the protecting secretions? For here, in the operative labor, exists a far greater test of virtues than in the normal labor. Explain, you who objected to the douche.

Notwithstanding all this departure from the previous methods, here and there there remained a few, erect and fearless, whose presence proved their worthiness to survive, by the fact of their unaffected strength. Ahfeld remained unshattered. Throughout obstetric realms this minority, willing to, but with the evidence

[1] Williams: The bacteria of the Vagina: Amer. Jour. Obstet., Oct. 1898. Here also may be found a complete bibliography on this subject.

in hand could not be convinced that previous clinical experience was all wrong, injurious and injudicious. Comparative clinical results spoke not in such a tone, neither so loudly nor so impulsively.

In 1898, notwithstanding Williams' position and positivism, before the American Gynecological Society, even alongside the fulsome praise most justly rendered his careful efforts, we find Reynolds stating that as "practical surgeons, however, we could not allow a laboratory demonstration of the innocuousness of the vaginal secretions to justify us in acting as though that innocuousness were a certainty, until it had been backed up by abundant clinical observation." In this expression may be seen reflected a sentiment felt in the main by all of that minority who had not been convinced. It is but a few months since a similar pro-and-con discussion occurred in the Chicago Gynecological Society; search will reveal a like disparity in thought in many such obstetric discussions.

It is admitted at the outset that the need of the douche to-day is not so broadcast as twenty years ago. Such denial would be tantamount to saying that all clinical and moral instruction passed between obstetrician and patient this many years had been without permanent effect. This is not so. Throughout the civilized world gynecologic physical expression is more hygienically perfect to-day than ever before; mortality proves that it never can be perfect, or without destructive influences. Ethics, hygiene, environment, all teach this to-day and not without avail.

So far as the charge that the douche[2] can harm is concerned, the clinician has always asserted that it, like any other means, can do harm, can inflict injury; we have, and there is, no means, however good, however harmful, but may be made to have a beneficial or an injurious effect. It is the intelligence of the one who employs it that determines the desired result.

The douche can harm only if repeated too often; if its force and volume be too great; if its temperature is too high; if a many-opening point be used. This latter is of the greatest importance. Argue as you may, no complete flushing occurs before the end of the many-opening point; as a consequence those parts in front of the point remain without the cleansing advantages of the douche; with the many-opening point there is only a backward flushing, not a forward and then a backward, like in the single-opening point. This will explain the many cases where, notwithstanding douches were given, cervical and high diphtheritic-looking puerperal patches still presented.

The clinician has maintained that to douche the parturient canal like judgment should be exercised as with an open surgical wound. Formerly excessive sponging (rubbing) and irrigation, even during the operation, interfered with primary union, by rubbing and washing away the physiologically exuded serum, and irritated the severed surfaces. To-day a better technic exists where these, the first-night errors of primary Listerism, have been corrected. He does not douche so often nor does he believe he need or can destroy all the germs with his solution; to him even now, *practically*, it is immaterial what the germ is; if he can but obtain good drainage from the genital tract he feels confident that his douche will do here what the douche will do in a surgical wound anywhere—it will remove the undrained retained discharges, and lead to a more clean and rapid restoration. By douching the wound he stimulates the cells to a healthier activity, he encourages the normal contractility of the parts, thereby assisting the fibers to express and expel any foreign material, as exudation, retention, pus, etc., there may be in their interstices, for in all parts of the body there is a functional contractility that determines toward an external expulsion. In the abscess, like in secretion, there is external determination by this contraction in the direction of the least resistance. Surgical drainage is but the artificial amplification of this natural expression.

Another argument which the antidouchist uses and which is often heard: Regard the Indian woman; she does not douche. No, neither do the many other aborigines. Admitted he is correct. Inquiry elicits that neither do the Chinese, nor the great multitudes of aboriginal women in both Asia and Africa use the douche or bath. Does this strengthen his position? Decidedly not, for where will you find such an antidouchist who will charge himself with the assertion that the woman of the aborigine is the equal of the woman of the Anglo-Saxon of to-day—physically, intellectually and morally? Further, the relative position in influence of the races but accentuates this point. Comparative anatomical and intellectual study of contemporaneous woman disproves that the douche, a localized bath, used with discretion, injures. Compare even the Anglo-Saxon woman of any strata one cares to choose. Among the socially most elevated or most modest, whom do you find the highest typed? She who is well groomed—judiciously and rationally. Do not the grand physical and mental pictures of the presidents of our great women's bodies betoken the careful grooming of bath, food, and method? This is the type Oliver Wendell Holmes referred to as the mother of the American Brahmin. Regard the farmer's wife; the one who is careful in grooming, the one who is slovenly; where lies physical strength and mental power, and vigor of offspring?

In the masterpiece of the Oriental harem, conveying the story of the slaves assisting at the bath, does not the artist hint, as delicately as subtle blending of color and shade render possible, by the gentle inclination of the slave's hand upon the robe, that those parts too are of no minor importance in the bath? Synthetically, with his brush, the master expresses whole volumes of critical gynecologic anatomy, hygiene, psychology, and social economics of the period. Science of to-day can only try analytically to explain and fill in the detail of determining cause, so perfectly appreciated and expressed by the master. And in his detail of the inclination of the hand was it but to serve as a fig leaf? What do the eyes of mistress and slave say? The one gratification in possession, the other gratification in the artistic preparation,

The Talmudic injunction to the Hebrew women: There shall be abstention for seven days subsequent to cessation of menstruation—which is to-day rigorously held by the orthodox, and which for all races would be an excellent law, solving many suggestions outlined in Bulwer Lytton"s "The Coming Race"—when this period of separation shall be ended and before she may discontinue the separation, she shall dip herself even be-

[2] Concerning the douche as a routine measure in the puerperium, it is stated: "In several (among how many?) cases the writer has seen infection in a later period of the puerperium the use of dirty syringes in the hands of the nurse."—Obstetrics, page 599. This observation may be extended, and with equally great force, to all surgical irrigations. The conclusion here intended must be that the reflection is not upon the douche, *per se*; it can only be upon the individualism of the user. Nor should it be overlooked that the exception does not break the rule; the exception proves the rule. Again, what traveller is there who has not observed that even the great men, the masters of the arts and in all climes, exceptionally err. Is, therefore, the conclusion justified that the exceptional and individual error annihilates all general and intrinsic merit?

yond the hair of the head three times in *running water*. Is it not here suggested, among other good suggestions, that the infective probabilities of the secretions were well known; does not this ancient ceremonial cleansing suggest the modern douche?

Likewise the ancients knew of the tendency of the lochiæ to grow in unclean and infective quality from day to day. Again, she was separated thirty-three or sixty-six days "to continue in the blood of her purifying." (Leviticus, xii.) Later the clinician explained this growing infectiveness on the ground that external causes worked upward, and that this pathogenicity declined in proportion as two important factors were present: 1, the neutralizing effect of the physiologic resistance, both local and general; 2, assisted by the neutralizing effect of the stimulation from the cleanliness, for the latter increases the former. This beneficial effect of cleanliness must have influenced the theologian, the clinician to the first prophylactic douche, though possibly he knew nothing of bacteriology (Leviticus, xii-xv), the phenomena alone directing him. A good illustration of this ascending infection was to be seen in the usual course of Cesarean section anterior to the perfected operation of to-day, when the open uterine wound was the rule. The secondary ascending putrefactive uterine juices infected the uterus—the old uterine inflammation—and the abdomen; this was more fatal in effect, in lowering the vitality and favoring secondary hemorrhages and sepsis than the primary operation.

That the upper and vaginal secretions are bactericidal must be admitted; all physiologic secretions of the body, like the serum, are inimical to invading influences, but let some change in stimulation occur, a like change will occur in secretion and function; their properties will be increased or diminished. That we can not rely on the vaginal secretions as always possessing essential sterile-producing qualities, as the bacteriologic conclusions of Krönig, Menge and Williams would seem to convey, is proven beyond a doubt by the primary and secondary venereal and other bacterial tissue changes produced by their micro-organisms upon the cervix and in the higher vagina. Another clinical suggestion as to the unreliability and variability in the apparently sterile properties of the non-pregnant or pregnant vaginal secretion is as follows:

Two friends, innocent of any previous glairing expression, visit the same hetæra. In the interval she bathes, but because of the urgency of the moment, she takes time only to bathe the externals. A few days after Friend B, embarassingly, but with full confidence, asks Friend A if he is all right. A smiles at B's discomfiture, and congratulates himself that he was not second best man. B, crestfallen, hies himself away for diplococcic treatment. This is no uncommon clinical experience. The explanation is simple. A met with a secretion inert, apparently sterile; possibly some diplococci may have shown on bacteriologic examination; if so, their influence was *nil*[3]. But due to the stimulation of A's presence, a newer, fresher secretion appeared, poured out from the deeper mucosa, which, when B was received, left an impression of bacteriologic character, whose unsterile intensity soon made itself manifest in its higher color of the next seven to seventy days. There is no doubt that B's skepticism—for he was no medical student—of secretional sterility was based upon good grounds, for had the vaginal prophylactic douche replaced the external bath, most probably B's tender reminiscences would have struck a less pathetic chord.

Krönig and Menge must admit that their laboratory probabilities of results in inoculation and cultivation are not the laboratory probabilities of the everchanging functional susceptibilities of the vagina of the non-pregnant or pregnant. That the prophylactic and protective douche is injurious, even to Menge must appear more than doubtful.

Again, consider a practical business, and one founded on commercial and competitive lines; it can not be fostered by methods having injurious and harmful probabilities. If there were no virtues in the douche, even to the non-pregnant, the dermatologist of experience, when requested for his experience upon this subject, could not testify to the fact that, even prior to the certificate, the presence of the douche-bag in the chamber of the successful commercially inclined dispenser of Schopenhauerian pleasures, suggests a vaginal hygiene conducive to the more happy preservation of the clients' physical and mental state, even to the felicitous degree where all disturbing doubt is fully eradicated. Vaginal-secretion sterility to the contrary, it is a well-known fact that more cases of skin trouble are traceable to the non-professional than to the professional, caused by this professional lack of vaginal hygiene.

(To be continued.)

[3] It is interesting to note in connection with this subject of the variableness and unreliability of bactericidal and infective properties of secretions where apparently sterile that: "In a recent controversy between Behrens (Berliner Klin. Wochenschrift, 1898, No. 6), chief of official examiners of hetæræ in Berlin, and Neisser (Ibid. No. 9.), it has been demonstrated that for the diagnosis one can not depend solely upon the microscopic examination of the secretion for gonococci; further, Behrens maintains that there may be a permanent or intermittent disappearance of the gonococci with a continuance of the clinical symptoms, or the latter may subside with a persistence of the gonococci, or both may disappear simultaneously. According to the official instructions to the medical examiners of Berlin, hetæræ are to be held under surveillance so long as they are capable of transmitting infections."—*Progressive Medicine*, Vol. ii, June, 1899, p. 182.

Therapeutics.

Angina Pectoris Gravior.

Sir R. Douglas Powell discusses the treatment of this disease in the seventh volume of Thomas Clifford Allbutt's "System of Medicine," as follows: "Taking first the anginal paroxysm, there are certain prominent symptoms that call urgently for relief, if relief be possible, namely: 1, pain; 2, arterial spasm if present; 3, stenocardiac and cardiac muscle failure; 4, shock and air hunger.

"Pain is almost always due to one or both of two conditions, namely, distension or muscular cramp of the ventricle. When first called to a patient in the midst of a paroxysm there is no time for careful examination, even did the condition of the patient permit of it. A tightened, thready pulse, with obviously laboring or it may be paralyzed heart, urges upon us the immediate use of the vascular antispasmodics, nitrite of amyl or nitroglycerin. Five to twenty minims of nitrite of amyl may be inhaled, or one to five minims of a 1 per cent. solution of trinitrin given. If there be violent or forcible heart action, stimulants are better avoided; but if there be flatulent distension, a draught of aromatic ammonia, soda, cardamon, and chloric ether may be given with the amyl inhalation or the nitroglycerin drops; if such means be not to hand, some very hot water with a little peppermint essence or brandy may be sipped slowly.

"In cases where there is marked heart failure, ether by preference, or brandy, in doses of 20 drops to 3i., in which one to two minims of trinitrin (1 per cent. solution) may be dissolved, should be injected hypodermically. When the pain is not relieved by this treatment, arterial spasm having thus been eliminated as its cause, the use of subcutaneous morphia is in-

dicated; due care being exercised with regard to the dose in view of the possible presence of kidney disease; if the factor be excluded, the degree of pain would regulate the dose, and the combination of atropin would be useful as a heart stimulant.

"The free use of oxygen inhalation is of very great value in all cases in which cardiac failure is a marked feature. The remedy has a double value in satisfying and relieving the air hunger—due to impaired circulation through the lungs—which is often so marked a feature; and in securing the circulation through the usually constricted coronary vessels of overoxygenated blood, which stimulates nutritive changes in the muscle and secures the removal of effete and half-changed material which embarrasses its function. In administering the oxygen, however, all personal co-operation on the part of the patient must be avoided; the naso-oral muzzle must never be used, but the gas must be directed over the mouth and nostrils by means of a glass funnel attached to the tubing, held a few inches away, so as to leave the patient to breathe a highly oxygenated air at his ease. Oxygen inhalation is particularly indicated in those cases in which morphia is found necessary; and, when the paroxysm is over and sleep induced, the gas should be allowed from time to time to fortify the air immediately about the patient's mouth and nose. It is best to let the patient choose his position for himself, and to adopt that which is most comfortable and helpful to him. When the heart is large, wanting in power, and embarrassed in action by fatty depositions about its surface and fibers, and is laboring against a high arterial resistance which is prone to acute increase, the line of treatment is a restricted but fairly nitrogenous dietary in three regular moderate meals; root vegetables, sweets and starchy foods and all sweet wines and beers being avoided. Fluid should be taken very sparingly at meal times, and supplemented by a draught, preferably of hot water, taken between meals or shortly after food, and again either at bedtime or in the early morning, with a view to the excretion of effete materials.

"Regulated open-air exercise is of the utmost importance—beginning with regulated level walks, proceeding to gentle inclines, and so on, but never overstepping the limits of cardiac power. The most important drug treatment of these cases consists in the judicious administration of mild mercurial laxative and saline aperients to reduce arterial blood-pressure; potassium iodid is also sometimes valuable to this end. It is in this stage of the disease that Professor Bradbury advises the use of erythrol tetranitrate, which he finds to exercise a more persistent influence on the blood-pressure than other preparations of the kind. In addition, strychnia and acid tonics, taken once or twice a day only, are sometimes of value.

In cases of valvular disease of the heart appropriate remedies must be employed. When digitalis is employed it is often advantageous to combine with it small doses of nitroglycerin (1/200 to 1/100 gr.), or of erythrol tetranitrate, to slacken the arterial resistance.

"Arsenic is the most appropriate drug in these cases—coronary disease and consequent secondary nutritional changes in the heart—and oxygen inhalations from time to time, and especially in the night, are very valuable in those where respiration becomes shallow and inclined to the Cheyne-Stokes type during sleep. In the latter case strychnia is the most valuable cardiac tonic. Small doses of digitalis or strophanthus are indicated when the cardiac power is much reduced and its rhythm irregular; caffein is also of great value, especially when the urinary secretion is scanty. The liver function must be stimulated from time to time by mercurial laxative. Let it be said in fine, that he who would treat angina pectoris in its multiform degrees with all the success that can be looked for must take the case in hand on broad lines in accordance with the well-defined principles of medicine, pursuing such lines into such detail as may be appropriate to each case."

Water Treatment of Gastro-Intestinal Disturbances.

Marfan advocates an exclusive diet of water for infants with diarrhea or other gastro-intestinal disturbances, the amount corresponding to the usual amount of milk ingested. (See JOURNAL, xxxi, p. 186.) A number of our Southern and European confrères have found this treatment extremely effective and a communication in *El Progresso Medico*, for August describes cases of diarrhea during the war in Cuba cured in three to five days with nothing but water taken freely, boiled and cooled to the temperature of the room.

Epilepsy.

℞ Lithii bromidi
Potassii bromidi
Sodii bromidi
Calcii bromidi, āā.....3i
Syrupi aurantii corticis.....3i
Aquæ, q. s. ad.....3iii

M. Sig. Teaspoonful in water after meals to prevent recurrence of convulsive seizures.

EPILEPSY WITH WEAK HEART.

℞ Potassii bromidi.....3v
Syrupi acaciæ.....3iv
Infusi adonis vernalis, q. s. ad.....℥xvi

M. Sig. Tablespoonful in water after meals in epilepsy with weak heart.

EPILEPSY WITH VASOMOTOR RELAXATION.

℞ Potassii bromidi.....3iv
Tinct. belladonnæ fol.....3ii
Syrupi 3iv
Aquæ q. s. ad.....3iii

M. Sig. Teaspoonful in water after meals in epileptic subjects with vasomotor relaxation.

Leucorrhea.

℞ Hydrastininæ hydrochloratis.....gr. xii
Zinci boratis.....gr. xii
Extracti belladonnæ.....gr. iii
Boroglycerini 3vi

M. Ft. suppositoria, No. xii. Sig. Introduce suppository into vagina at bedtime after employing cleansing douche.

℞ Sodii boratis.....3ii
Sodii bicarbonatis.....3iv
Potassii chloratis.....3ii

M. Sig. Two tablespoonfuls in two quarts of water as vaginal douche twice daily, useful as a cleansing agent in leucorrhea with acid discharge.

℞ Extracti belladonnæ.....gr. ii
Acidi tannici.....gr. xxx
Boroglycerini 3iii

M. Ft. suppositoria No. vi. Sig. One by vagina each night after douche, useful in subacute and chronic cases with profuse discharge.

For Catarrhal Affections Following Measles and Whooping Cough.

Hock advises the employment of creosote, prescribing as follows:

℞ Creosoti .....m. xv
Saccharini .....gr. ¾
Olei morrhuæ.....3iii

Ft. emulsio. Sig. From 2 teaspoonfuls to 3 tablespoonfuls a day.

Antipyrin in Dysentery.

Ardin-Deltat has employed antipyrin in the dose of seventy-five grains to eight ounces of water as a rectal injection in dysentery, given three times a day and retained for fifteen minutes. He claims that the relief from pain and tenesmus is immediate, that the number of stools is decreased, and that convalescence is speedily established.—*Therap. Gaz.*

Alcohol in Puerperal Endometritis.

In eighty cases after laborious delivery or indications of septic infection of the uterus, F. Ahlfeld injected a 50 per cent. solution of alcohol into the uterus, with promptly favorable results; the fever vanished after one or two injections and serious uterine affections were prevented.—*Semaine Med.*

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Journal of Insanity, July.

1.—*Some of the Problems of the Alienist. Frederick Peterson.
2.—*Legal vs. Scientific Test of Insanity in Criminal Cases. Carlos F. MacDonald.
3.—*Care of Insane in Farm Dwellings. G. Alder Blumer.
4.—*Nature and Principles of Psychology. Boris Sidis.
5.— Our Work and its Limitations. Edward C. Runge.
6.—*The Puerperal Insanities. H. A. Tomlinson.
7.—*The Rôle of Wound Infection as a Factor in the Causation of Insanity. A. T. Hobbs.
8.— The Desirability of Close Connection Between the Psychopathologic Laboratories and Hospitals for the Acute Insane. Samuel B. Lyon.
9.—*Some Difficulties in the Retraction Theory. W. L. Worcester.
10.— Treatment of Sick and Insane in Persia. James P. Cochran.
11.— Progress in Clinical Study of Psychiatry. Edward Cowles.
12.—*Clinical Cases, IV. Pseudo-Dementia Paralytica Uremica. Henry J. Berkley.

Annals of Surgery, September.

13.— Gastroplication of the Dilated Stomach. W. H. Horrocks.
14.— Intestinal Treatment of Tuberculous Peritonitis. Henry T. Byford.
15.—*Interscapulo-Thoracic Amputation. Robert G. LeConte.
16.—*Report of Case of Resection of the Liver for Removal of a Neoplasm; with Table of Seventy-six Cases of Resection of the Liver for Hepatic Tumors. W. W. Keen.
17.—*Treatment of Neoplasms of the Liver. James E. Thompson.
18.—*Results and Methods of Treatment of Compound Fractures at the J. Hood Wright Memorial Hospital. William G. LeBoutillier.
19.— Sarcoma of the Kidney in an Infant; Recovery after Nephrectomy. Robert Abbe.
20.— Splenectomy for Floating Spleen, with Twisted Pedicle. Isaac Scott Stone.

Toledo Medical and Surgical Reporter, September.

21.—*Surgical Cases of Bladder and Urethra. W. H. Fisher.
22.— Eulexine in the Treatment of Diabetes. Joseph D. Ely.
23.—*Treatment of Carbuncles. Milton P. Creel.
24.— Treatment of Chronic and Acute Diseases of the Respiratory Passages with Guaiacol Carbonate and Creosotal. Fritz Hölscher.

Journal of Cutaneous and Genito-Urinary Diseases, September.

25.—*Two Epidemics of Alopecia Areata in an Asylum for Girls. John T. Bowen.

Medical Fortnightly, September 1.

26.— Psychic Elements in Disease and Suggestion. Arthur Macdonald.
27.— Physiology. A. L. Benedict.
28.— Vertigo. Philip Zenner.

Medical Mirror, September.

29.— Ununited Fracture in Childhood. Edward Owen.
30.—*Athletics in Their Relation to the Male Genito-Urinary Organs. Frank Lydston.
31.— Faith, Fraud and Suggestion in Therapeutics. T. F. Lockwood.

Medicine, September.

32.—*Albumosuria. A. L. Benedict.
33.—*Movable Kidney. A. E. Halsted.
34.—*A Case of Fibrinous Peritonitis in a Child Two and One-Half Years Old. Charles G. Cumston and Robert W. Hastings.
35.—*Treatment of Tapeworm by the Use of Morphin Injected into the Protruding Part of the Parasite. J. W. Kime.
36.—*A Newer Pathology of Epilepsy. Daniel R. Brower.
37.—*Some of the Commoner Reflex Symptoms from Diseases of the Rectum. I. L. Watkins.

Brooklyn Medical Journal, September.

38.—*Prevention and Modern Treatment of Tuberculosis. G. W. Brush.
39.—*The Metric System in Prescriptions. E. H. Bartley.
40.— Ovarian Cyst with Torsion of the Pedicle. F. W. Wunderlich.

Illinois Medical Journal, September.

41.—*Surgery of the Puerperium. Denslow Lewis.
42.—*Puerperal Surgery. Bertha Van Hoosen.
43.—*Variation in Manifestations of Malaria. Chas. Dewey Center.
44.—*Atypic Malaria in Children; with a Case in Point. Rosa Engelmann.
45.—*Treatment of Chronic Malaria. John B. Maxwell.

Kansas City Medical Index-Lancet, September.

46.— Some Thoughts on Various Forms of Infection. M. P. Overholser.
47.—*Healing Frauds and Superstitions. Rev. C. M. Bishop.
48.— A Woman with a Tumor and How They Parted. Herman E. Pearse.
49.— Treatment of Broken and Deformed Nasal Septa. Hal Foster.
50.— Chronic Morphinism. A. J. Pressey.
51.— Bovinine as a Local Application for Ulcers. B. C. Hyde.
52.— Review of Recent Advances in our Knowledge of the Anatomy and Physiology of the Nervous System. John Punton.

Medical Standard, September.

53.—*The Family Physician and the Middle Ear. E. E. Clark.
54.— Diagnosis and Clinical Course of Puerperal Eclampsia. Frank B. Earle.
55.—*The Technic of Local Anesthesia. Aime Paul Heineck.
56.—*Albuminuria—Its Clinical Significance. H. P. Wilson.
57.—*Suprarenal Extract in Ophthalmic, Aural and Allied Surgery. A. G. Aldrich.
58.— A New Adjustable Abdominal Electrode. B. Y. Boyd.
59.—*Sulphocarbolates in Typhoid Fever. W. F. Church.
60.— The Therapeutic Action of High Frequency Electric Currents in Arthritism. G. Apostoli.

Pediatrics (N. Y.), September 1.

61.—*Malaria in Children. Dr. Moncorvo.
62.— Congenital Club-Foot—Equino-Varus. Henry Ling Taylor.
63.—*Morbus Ceruleus. C. C. Mapes.
64.—*Belladonna in the Bronchopneumonias of Children. D. A. Hodghead.

Journal of Scientific Medicine, August.

65.— The Worthlessness of Beef Extracts. John Madden.
66.— Report of a Case of Eclampsia. Victor F. Mueller.
67.— Alleged Dangers of Peroxid of Hydrogen in Surgery. Gustavus Blech.
68.— First Warnings of Glaucoma. W. H. Poole.

Memphis Medical Monthly, September.

69.— Material Equivalents of Physical Action. Frank W. Vance.
70.—*Incipient Pulmonary Tuberculosis, with Special Reference to Treatment. G. W. Penn.
71.—*Cerebrospinal Meningitis vs. Fulminant Malaria—A Case in Point. Wm. Britt Burns.
72.— Report of Surgical Cases—Appendicitis with Hematoma of the Ovary; Suprapubic Lithotomy in a Child. Wm. D. Sumpter.
73.— Albuminuria as a Diagnostic Symptom, with Report of Cases. Wm. P. Ball.
74.— Something Rare in Twins. John Tackett.
75.— A Case of Malarial Hematuria. J. W. McGaha.

Southern Practitioner, September.

76.— Suggestive Therapeutics. J. T. McColgan.
77.— Mammary Abscess—Antepartum. J. L. Barton.

St. Paul Medical Journal, September.

78.—*Tuberculin as a Diagnostic Agent in Tuberculosis. George D. Head.
79.—*Drainage of the Bladder Through a Catheter in the Urethra. A. T. Cabot.
80.—*What Evidence Have we in Support of the Theory that Epilepsy is Due to Autointoxication? T. B. Futcher.
81.—*Membranous Conjunctivitis. Thomas McDavitt.

New Orleans Medical and Surgical Journal, September.

82.—*Importance of Early Recognition and Treatment of Catarrhal Diseases. W. Scheppegrell.
83.—*Food Impurities and Clinical Preservatives. Quitman Kohnke.
84.—*Lessons of Yellow Fever in New Orleans in 1879. Edmond Souchon.
85.—*Calentura vs. Yellow Fever. C. H. Tebault, Jr.

New York Medical Journal, September 16.

86.—*Atypical Forms of Pneumonia. A Clinical Study. E. Palier.
87.—*Hysterical Blindness. Arthur T. Muzzy.
88.—*Seasickness. J. Carlisle De Vries.
89.—*Epiphyseal Separation of the Ends of the Humerus, Michael Lucid.
90.— Clinical Report of an Epidemic of Infantile Diarrhea. Isaac J. Jones.
91.—*Epileptic Eye Strain. C. M. Capp.
92.— Glaucoma Following Supraorbital Neuralgia Malarial Origin. Louis A. Bize.

Medical News (N. Y.), September 16.

93.—*Roentgen-Ray Examinations in Incipient Pulmonary Tuberculosis. Francis H. Williams.
94.—*Climate and Renal Diseases. J. B. Walker.
95.—*New Operation for Inguinal Hernia. Carl Beck.
96.—*Concerning Colorado. Samuel A. Fisk.
97.—*Occurrence of Cheyne-Stokes Respiration During Sleep, a Diagnostic Symptom in the Early Stages of Interstitial Nephritis. Charles O'Donovan.
98.— Esophagotomy for Extraction of an Impacted Tooth-plate of Six Years and Four Months' Standing. G. G. Eitel.

Medical Record (N. Y.), September 16.

99.—*Floating Liver and its Clinical Significance. Max Einhorn.
100.—*Practical Treatment of Typhoid Fever. Basil M. Taylor.
101.—*Facts and Fallacies in Uranalysis. Theodore W. Schaefer.
102.— Demonstration of Two Cases of Exstrophy of the Bladder, with Suggestions for a New Operation. J. H. Branth.

Boston Medical and Surgical Journal, September 14.

103.—*Intussusception. John C. Munro.
104.—*Growth and Extension of Carcinoma. W. T. Councilman.
105.— Two Cases of Injury of the Cord Resulting from Fracture of the Spine. John Jenks Thomas.
106.— Growth and Sociological Conditions. Arthur Macdonald.
107.— An External Application in Scarlet Fever to Shorten the Period of Desquamation and Diminish the Danger From it. Francis H. Williams.

Maryland Medical Journal, September 16.

108.—*An Emergency Obstetric Case. Hugh H. Young.
109.— A Visit to the Loomis Sanitarium. William B. Canfield.

Cincinnati Lancet-Clinic, September 16.

110.—*Some Observations on the Rocky Mountain Region. C. B. VanZant.
111.—*Suicide. H. V. Sweringen.
112.— Ophthalmic Memoranda. David DeBeck.

Philadelphia Medical Journal, September 16.

113.— Cases of Fracture of the Skull Followed by Recovery. Dudley P. Allen.
114.—*Contagious Infections. Are They Synonymous? T. A. Grigg.
115.—*Nervous Hemorrhages: A Contribution to their Study. S. W. S. Toms.
116.— Malignancy in the Female Genito-Urinary System. L. Grant Baldwin.
117.—*Phenomena and Mechanism of Inheritance. Edwin G. Conklin.
118.— Infantile Gonorrhea: Hiccough: Earwax. W. Blair Stewart.

AMERICAN.

1.—See JOURNAL, June, 10, p. 1325.

2.—Ibid, p. 1325.

3. **Care of the Insane at Farm Dwellings.**—Blumer reports his experience with the treatment of the insane in detached farm-houses at the Utica Asylum, and advocates the extension of this method.

4. **Psychology.**—The relation of psychology to the medical profession, especially as regards the field of hypnotism and other psychic symptoms, is treated by Dr. Sidis. He criticises the neurologist for neglecting this, and claims that the alienists have taken a step in advance in this regard.

6. **Puerperal Insanity.**—Tomlinson analyzes some 60 cases of puerperal insanity as regards their causation, symptoms, etc., the most important consideration, of course, being the prognosis, and he concludes as follows: The history of the cases recorded in this paper, and of one hundred and fifty others, from among which they were selected, would indicate that the prognosis in any given case of insanity connected with maternity was dependent upon the heredity of the patient; and further that those cases having a heredity of insanity alone are most likely to recover; while those having a heredity of consumption, alcoholism, syphilis or cancer, are the most certain to be the victims of progressive degenerative changes. Or to express the same conclusions in another way: The children of the insane are unstable, but the children of those suffering from somatic disease which seriously impairs vitality are defective.

7. **Wound Infection in Insanity.**—The subject of Hobbs' paper is the same as that of some other recent communications by him—the insanity connected with gynecologic conditions. He mentions, however, insanity from erysipelas infection, but the main part of his paper is based on 98 alleged puerperal cases admitted into the London Asylum since the year 1870. Twenty-three of these he has personally examined, and in 22 of them he found pelvic lesions. In 21 of these surgical interference was followed by recovery in 8 cases and improvement in 4. In the past four and a half years they have treated in the London institution 187 women and found lesions in 163. Eighty had inflammatory lesions of the pelvic organs that he thinks can be best credited to sepsis at the time of the puerperium. The surgical treatment of these 80 produced physical recovery in nearly all, mental recovery in 45 per cent., and mental improvement in 25 per cent. He concludes by emphasizing the importance of care on the part of the obstetrician in protecting his patients from septic infection, and of the necessity of removing pelvic lesions in the insane.

9. **Difficulties in the Retraction Theory.**—Worcester notices certain difficulties in the acceptance of the retraction theory of the terminal filaments of the neuraxones. The first is the rapidity of the movement that is required by the quickness of the mental action, which is not parallel with any physiologic condition. Next, the power of selection attributed to the nerve-cells seems to him hardly credible. He also notices a phenomenon which it seems to him impossible to explain by this hypothesis. When a patient affected with hysterical amblyopia is made to look into the apparatus of Flees for the detection of simulated blindness, in which, by an arrangement of mirrors, only one object can be seen by each eye, and that seen by the right appears to the left of that seen by the left eye, she sees only that which is visible to the amblyopic eye. Thus, if the right eye is the one affected, she will see only the object apparently situated to the left, which is, in fact, invisible to the left eye. It will be noted that, in such an experiment, the subject does not know whether she should see one object or more, or what the relative positions of the objects seen should be. On the supposition that there is an actual interruption of connections, the patient should see only one object, namely, that which is visible to the left eye, and, having nothing with which to compare its position, would have no reason to suppose that she saw it with the other eye. Why, under such circumstances, should there be a reversal of the connections and interruptions previously existing?

12. **Pseudo-Dementia Paralytica Uremica.**—Berkley reports a case which he considers as distinct from paretic dementia but due to uremic intoxication. The case is very elaborately reported with pathologic findings.

15. **Intrascapulo-Thoracic Amputation.**—The author of this paper finds ten different methods have been used for dealing with the hemorrhage in intrascapulo-thoracic amputation, and the last, disarticulation of the sternal end of the clavicle with ligation of the arteries and the veins, is the one adopted in the case he here reports. The operation was done for sarcoma involving the shoulder-joint. The method consisted in: 1. Incision from the sternal end of the clavicle along this bone to about its middle and curved downward to the anterior axillary fold. The skin and fascia are dissected up, exposing well the inner two-thirds of the clavicle. 2. Disarticulate the clavicle by severing the sternal attachment and the rhomboid ligament, cutting the attachment of the sternomastoid muscle close to the bone and separating the clavicular portion of the pectoralis major with the finger from the costal portion of the muscle of the anterior axillary fold. 3. The clavicle is now pulled outward and upward, and if the subclavius muscle does not readily strip off, its attachment to the first rib is divided. This exposes the pectoralis minor and it is divided and the coracoid portion reflected upward with the clavicle, thus exposing the axilla and the vessels. 4. The sheath of vessels is opened and the vein dissected away from the underlying artery. Two ligatures are tied around the artery. The arm is then held up to empty it of blood, while two ligatures are passed around the vein but not tied until the arm is blanched. This renders the use of an Esmarch bandage unnecessary. Unless the cephalic vein has joined the axillary below this ligature, a separate tying of this vessel is required. 5. The vessels are now severed, together with the brachial plexus of nerves and the costal portion of the pectoralis major, completing the division of the anterior attachment of the arm. 6. A posterior incision is made from some point on the anterior one, as near the tumor as advisable, directly downward and backward to the inferior angle of the scapula, and up again to the posterior axillary fold. The skin and superficial fascia are dissected up for a short distance—half an inch to an inch. 7. The trapezius is now severed and the transversalis colli or posterior scapular artery is secured. The omohyoid muscle is cut and the suprascapular artery is secured, and the muscles attached to the inner border of the scapula are rapidly divided close to the bone; then the serratus magnus and latissimus dorsi are cut, the latter at the posterior axillary fold. The arm is then held to the body by the skin of the axilla alone. If there is sufficient flap to cover the wound, the anterior and posterior incisions are joined through the axilla, but if more skin is needed, a flap may be raised from the under surface of the arm. The wound is then closed with suitable provisions for drainage. The advantages of this operation are summed up as follows: *a.* It gives the widest and fullest possible exposure of the vessels, and decreases the accidents of ligation to a minimum. *b.* The disarticulation of the clavicle is simpler, quicker and easier than the resection of the bone, and the danger of wounding important vessels is less, because these structures are well protected by the sternothyroid muscles. *c.* The elevation of the arm, after securing the artery and before the vein is tied, makes a practically bloodless amputation. *d.* The suprascapular and posterior scapular arteries—the only vessels that can bleed—are easily picked up before being cut. *e.* In malignant growths, where the outer end of the clavicle is involved, there is less risk of a return if the entire bone with its periosteum is removed. *f.* It removes everything in one piece, a more surgical procedure when dealing with malignant growths.

16. **Resection of the Liver.**—After referring to a former paper, Keen reports a third case of resection of the liver for a large tumor. The operation was done entirely with a Paquelin cautery and the hemorrhage was comparatively slight. The packing was removed in 48 hours. There was no hemorrhage, but an escape of bile from the fourth to the twelfth day. In spite of this, if he should hereafter have to deal with a small charred surface after removing a hepatic tumor, Keen says that he will be sorely tempted to test the absorbent powers of the peritoneum by immediate closure of the wound without drainage. He analyzes the literature and appends a table of 17 cases, including the present one, making a total of 76 which he has collected. A pathologic report by Drs. Coplin and Tinker is appended. The tumor appears to have been a cylindrical cell cancer.

17. **Neoplasm of the Liver.**—Thompson reports a case of removal of a hepatic gumma and analyzes the literature on the treatment of hepatic neoplasms.

18. **Compound Fractures.**—LeBoutillier's paper is a critical analysis of 55 cases of compound fracture of the long bones treated at the J. Hood Wright Memorial Hospital during the three years ending Jan. 1, 1899. A number of the cases are reported in brief detail. He believes that the treatment most likely to give the best results is one with the least possible operative interference. Free incisions, immediate excision of tissues badly damaged, whether by violence or by soiling, drainage of pockets without packing of the wound, the removal of as little as possible of the fragmented bone, the suture of bone or muscle in clean wounds only and with the amplest drainage, may in appropriate cases supplement the most thorough and painstaking mechanical cleansing of the wound. He has not seen medicated solutions or dressings at this time followed by any better results than the use of sterile gauze. For irrigating he believes a physiologic salt solution to be as efficient as any other, and less liable to do further harm to bruised or partly devitalized tissue. What bacteria remain in the wound after thorough mechanical cleansing can not be reached by antiseptic solutions or dressings, for they are probably imbedded in tissues and inaccessible to germicides, without damaging viable tissue. The limb should be put in proper apparatus; that one being the best to use in the particular case, with which the operator is most familiar in simple fractures. During the next few hours and days careful watch for the occurrence of symptoms of inflammation should be kept up, and at their advent there should be no delay in inspecting the wound and taking what further measures the individual case may require. Where free incisions are made, at the primary dressing, the circulation of the wound is less embarrassed by the swelling so apt to occur as a result of traumatism, and the tissues are better able to protect themselves from the harmful influences of bacterial multiplication, as they are better nourished. Absorption of toxic products is also less likely to occur, and give rise to severe constitutional symptoms.

21. See abstract in JOURNAL, Sept. 9, p. 657.

23.—See JOURNAL, May 6, p. 101, p. 991.

25. **Alopecia Areata.**—Bowen describes two epidemics of alopecia areata that occurred in an asylum for girls in the city of Boston. In the first it seemed to start in one girl, but four months later it was found that 63 of the 69 children in the institution were more or less affected. Two months later the areas began to fill in, and at the end of six months a few patches only could be found. The girl in whom the affection was first observed left the institution and was away three years. It was not certainly known whether she perfectly recovered and it is not at all unlikely that some small areas of baldness existed. Six years after the epidemic she re-entered the school at the age of 17. There had been no cases during her absence. A month or six weeks later patches were observed on the head of one of the children and four or five months after her return 26 of the 45 children were found to have spots of baldness of the same dotted and angular character as those of the first epidemic. He has not seen reported any similar experience in this country, though they have been observed in France.

30. **Athletics in Their Relation to Genito-Urinary Organs.**—Several matters of importance in regard to athletics that are not altogether noticed as much as they should be are here referred to by Lydston. He believes that athletic exercises within physiologic limits are perfectly healthy and that they have frequently good effect on the sexual irritation in youth. As regards strain or friction on the groins, genitals and perineum, it is well known that they may set up irritation, and in this connection he speaks of bicycling, which is injurious in case of existing troubles of the urethra, prostate and bladder. He does not, however, believe that it can set them up in an originally healthy individual. As regards accidents, the professional athletes are safer than the amateur. In conclusion he calls attention to the possibility of deranging metabolism by training. In the case of uric acid diathesis, physical exercise may be necessary. When the systematic exercise is discontinued, however, the body can not care for the proteids, and a lithemic crisis may be induced. He can assure anyone who contemplates entering active training that he will thereby acquire a physiologic habit that may be embarrassing in later life.

32. **Albumosuria.**—Benedict discusses the subject of albumosuria and its possible significance. Its test is so simple that it should be a matter of routine in urine examinations. His method is to float the suspected urine over the alkaline copper solution used in testing for sugar. On warming carefully a lilac band develops in the presence of albumose or peptone. He reports six cases, the first due to cystic trouble and the second probably; the third connected with a remote pathogenic process, and in the fourth a possible relation with the liver and abdominal viscera, but the diagnosis was obscure. In the fifth case the albumose was essentially renal, and in the last there was a tumor of the liver. He asks for criticism and suggestions on this subject in regard to which our knowledge is so imperfect.

33. **Movable Kidney.**—Halstead's paper is almost monographic on the subject of movable kidney and not easy to abstract.

34. **Fibrinous Peritonitis in a Child.**—Cumston and Hastings report a case of tubercular fibrinous peritonitis in a child two and one half years of age, which was operated upon with success except that a troublesome fistula was left. A second operation to close the fistula was attempted, but without good results, a second fistula being formed. The child survived the operation only five weeks, dying from exhaustion. The case is of interest in the uncharacteristic development of the affection, the extent of the lesions and as showing how much the abdominal cavity of a child will stand in the way of operation.

35.—See JOURNAL, June 3, p. 1263.

36.—See JOURNAL, May 27, p. 1172.

37. **Reflex Symptoms from Rectal Disease.**—Watkins calls attention to the puzzling reflexes occasionally observed from ulceration of the rectum and which lead to serious gynecologic mistakes. He reports 3 cases and states that his object is only to put the general practitioner on his guard against advising ovariotomy, etc., in such cases.

38. **Prevention and Treatment of Tuberculosis.**—Brush's paper treats at length of the cause of consumption and methods of its prevention. Admitting it to be one of the most fatal diseases, and yet one that has been found to be curable in its early stages, the chief points to be borne in mind are: 1. That it is an infectious disease transmissible from person to person through the respiratory and digestive tracts or through wounds of the skin and mucous membranes. While all who come in contact with the disease may not develop it, no one can determine when the system is in a condition favorable to do so. It is reasonable, therefore, to apply all necessary precaution in any case. 2. Inasmuch as it can be conveyed through infected food, the present law for checking the disease in cattle should be enforced. It appears too that food displayed upon street stands is also a source of danger as not being protected from street dust, and some regulation requiring better security in this respect should be demanded. It having been shown that wherever intelligent measures of prevention have been adopted, the disease has decreased, it will be criminal for the state to neglect its duty in this regard. He also speaks of the necessity of prohibiting expectorations in street and public conveyances, and also of the danger of promiscuous kissing.

39. **The Metric System in Prescriptions.**—Bartley advocates the more universal use of the metric system in doctor's prescriptions. Calculation of doses has been the principal deterrent, and he suggests a simple rule to render this less troublesome. It is as follows: A dram of the two-ounce mixture will contain as many grains or minims of any ingredient as there are grams or c.c. of that ingredient in the whole two ounces. By keeping this rule in mind the calculation of doses becomes easy and simple.

41.—See JOURNAL, May 27, p. 1173.

42.—Ibid, p. 1173.

43.—Ibid, p. 1172.

44. **Atypic Malaria in Children.**—The irregular course of malaria in children is noticed by Engelmann, who reports a case that first suggested typhoid infection, but showed malarial origin after blood examination. The case was of interest from its unknown mode of infection; the irregular and masked course of the disease; the peculiar type of the protozoön; the

disappearing leucocytosis, and the existence of a limited area of lung consolidation with low temperature curve, pulse and respiratory ratio. The patient did well under quinin treatment for chronic malaria.

45. **Treatment of Chronic Malaria.**—Maxwell describes his method of treating malaria cases in special malaria regions, which is, for an adult, as follows:

℞. Hydrarg. chlor. mite.
Sodii bicarb., āā.....grs. x
M. S. At bedtime.
℞. Quinin sulph.....grs. xx
Fiat capsulæ No. iv.
Sig. Two hours apart, the last dose 12 hours before chill time.

Then

℞. Elix. quin. strych. et ferri.....℥iv
Sig. Teaspoonful three times daily. But it does not always do in practice. A certain per cent. of the patients will have chills while taking the medicine right along.

Finally he stumbled upon this, to be used as a tonic after the calomel and quinin had been given as above, and to his surprise and gratification he had no relapses.

℞. Quinin sulph.....ʒi
Acidi nit. dil.....ʒxiss
Spts. frumenti.....℥iv
M. Sig. Teaspoonful just before eating, three times daily.

He thinks the prescription given above containing the spirits is the best thing he has ever tried and that the patient can be assured in the most dogmatic manner that this medicine will cure him.

47. **Healing Frauds and Superstition.**—This article is of interest as being the publication of a sermon in a medical journal. The preacher's views are such as any physician can indorse, and it appears that in the locality where the sermon was delivered the ministers are generally up in arms against certain frauds which make their headquarters there.

53. **The Family Physician and the Middle Ear.**—The author of this paper writes to call attention to the great necessity of the general practitioner paying attention to ear troubles in their early stages, as in the treatment of these cases prevention is better than cure In the beginning of tubal catarrh, great relief will result from inflation of the middle ear, and he describes the method. Many times a child suffering from earache can be immediately relieved by taking out the Politzer bag and inflating the middle ear, instead of dropping oils, extracts, etc., into the outer auditory canal.

55. **Local Anesthesia.**—Heineck's paper gives the technic of local anesthesia in full detail, stated in such a manner that nearly the whole article would be required to be given in an abstract. The reader is referred to the original.

56. **Albuminuria.**—Wilson sums up his paper as follows: 1. We should know our tests and their fallacies so as to detect a true renal albuminuria. 2. If we have a true renal albuminuria we should by repeated microscopic examination of the sediment, well concentrated by gravity and the centrifuge, satisfy our minds that casts are or are not present. It may take several hours to attain this result. 3. True renal albuminurias, functional in nature, must be looked upon as cases of increased susceptibility to nephritis, though many of them are comparatively innocent. It would seem from the foregoing that with many of these cases it is largely a matter of degrees of the same condition and that many cases of incipient nephritis cure up under proper conditions, just as incipient tuberculosis frequently is overcome by a natural tendency toward recovery.

57. **Suprarenal Extract.**—The writer gives his experience with suprarenal extract, of the value of which he was at first skeptical. He usually precedes it with cocain, though he can not affirm that it counteracts the poisonous effect of the latter as some have stated. He now never operates on pterygii without using it, and he finds it of great value in other minor operations, such as tenotomy. In the ear it has but a limited effect, but in all operations within the nasal cavity it is, next to cocain, most valuable. In the throat the same conditions exist as in the nose only in a lessened degree. It aids in galvanocautery operations by enhancing the effect of cocain, and the same may be said of it in tonsillotomy. He has not observed that it materially lessens the hemorrhage. Aldrich sums up his experience with it as follows: 1. The extract of suprarenal capsule is one of the most powerful of vasoconstrictors, and is, in addition thereto, an erectile tissue contractor. 2. As such it allows a deeper and more perfect anesthetic action from the local use of cocain, enabling the surgeon to have highly anesthetized surfaces and tissue for operation. 3. The ischemia from such action is so profound as to act as a prolonged hemostatic, giving thereby a clear field for operation, and preventing secondary hemorrhage. 4. Its action can be depended upon, in every case. It is in no way deleterious to tissues operated upon, nor does it interfere with aseptic healing.

59. **Sulphocarbolates in Typhoid.**—Remarking first that intestinal medication in typhoid fever has of late years been going apparently out of date to some extent, Church states that resort to drugs must be had in many cases where all the appliances and trained nurses are not at hand. It is often imperative that something must be given and he believes that we must do something to prevent a toxemia not directly due to the typhoid bacillus, which takes place if the bowels are not treated with antiseptics and kept in proper activity. He, himself, would use the sulphocarbolates were he the subject of the disease. There is nothing difficult in their administration. In cases with constipation he would give in the beginning small doses of calomel, frequently repeated until moderate catharsis has resulted, to be followed by 10 grains of sulphocarbolate of sodium every 2 to 4 hours, in the average cases. In ordinary cases with diarrhea the zinc salt is preferable on account of its strong astringency, and he speaks especially of the value of the administration of these drugs in reducing the offensiveness of the diarrhea. In diarrheas generally, especially those due to fermentation, in enteritis and in dysentery or any condition where intestinal antiseptics are required, these drugs are extremely valuable.

61. **Malaria in Children.**—Moncorvo continues his article on infantile malaria, noticing the bowel symptoms, the associated secondary infections, endocarditis, pericarditis, the abortive forms with neuralgic symptoms, irregular fever, vertigo, syncope, hiccough, dermatoses noticed by Boicesco and others, abdominal swelling, rectal prolapse, etc. He remarks on the diagnosis, the differentiation from various disorders like tuberculosis, etc., and he says that any fever of irregular course without noticeable antecedents to account for it in a young child must give rise to a suspicion of paludism, especially in a country where malaria exists. As regards prognosis, the practitioner must ever be on his guard when the disease has once obtained a foothold, no matter how mild it may appear. The younger the child, the more careful should we be, and it goes without saying that the need of an early diagnosis is imperative.

63. **Morbus Ceruleus.**—The comparative infrequency of blue disease and the lack of literature on the subject appear to have been the stimulus for the present article by Mapes. In it he goes over the literature quite thoroughly, using as a text a case recently reported by Gossett. The paper, as a whole, is a useful discussion of the subject, though not original.

64. **Belladonna in Infantile Bronchopneumonia.**—Beginning with the report of a case of a child in which other remedies had failed, and improvement rapidly followed the use of belladonna with calomel, Hodghead describes his experience with this remedy, covering 25 cases, and 5 cases observed in the practice of other physicians. He claims that belladonna has just such a physiologic action as is suitable for the disease for which it is here recommended. 1. In small doses it is mildly narcotic, producing a slightly sedative influence upon the nervous system, and having a tendency to make the child less irritable, and its condition less uncomfortable. 2. It is, in small doses, a heart tonic, raising the arterial tension, and increasing the circulation by stimulating the cardiac sympathetic, and in a corresponding manner depressing the pneumogastric, the inhibitory nerve. 3. It is a respiratory stimulant, influencing in some degree the diaphragm, but more especially does it affect the accessory respiratory muscles, although its action in this regard, it must be confessed, is not yet fully understood. 4. Belladonna produces a dilation of the superficial capillaries, and in a corresponding degree, and in the same manner, relieves the congested lungs. It might also be remarked that it produces an increased secretion of urine

and of bile. 5. The most important influence, however, which the drug exerts, and the one which bears directly upon the question at hand, is to diminish secretion in the bronchial tubes and pulmonary tissues. The water-logged condition of the lungs is overcome or prevented. Its effects, in such instances, seem almost mechanical, as well as marvelous. The superabundant and dangerous secretions are diminished in quantity, and the threatened asphyxia, which becomes completed when these secretions increase so abundantly that the child is unable to rid its lungs of them, is averted. He has found it necessary to give it in quite large doses every hour, or two hours, until the desired results are obtained. Children are not very susceptible to this drug and readily bear it. In the case reported he gave it in 1 and 2 drop doses every half hour. He says that if it will prove as effective in the hands of others as it has in his, where the mortality has been reduced from 60 to 80 per cent. to less than 10 per cent. it will be as useful as antitoxin has been in diphtheria.

70. **Incipient Pulmonary Tuberculosis.** — Considering consumption in its beginning as a curable disease, Penn believes that dissemination of information among the public is desirable. The best results in treatment, he thinks, will be obtained in a sanatorium. He is doubtful as to the value of operative methods like those of Murphy. Out-of-door life and elevated situation are desirable. He believes egg albumin to be one of the most efficient nutrients in this disorder. As regards drugs, the best to be relied on is strychnia; it should be carried to the limit of tolerance, and creosote given for the relief of cough and fever.

71. **Cerebrospinal Meningitis vs. Malaria.**—Burns reports a case with the symptoms of fulminant malaria, including the development of the estivo-autumnal parasite in the blood, with also some symptoms strongly suggesting cerebrospinal meningitis, and a tough, elastic secretion in the nose containing what was believed to be meningococci. Recovery.

78. **Tuberculin as a Diagnostic Agent.**—After noticing the defective measures formerly in use, and giving the facts of the tuberculin reaction as best understood at the present day. Head gives the results of 487 recorded cases of tuberculin injection given for diagnostic purposes, as collected by himself from the literature and elsewhere. Of the 487 cases, 54 per cent. reacted and 46 per cent. failed. In 136 cases 83, or 61 per cent. were demonstrated as tuberculous by operative, post-mortem and bacteriologic evidence. In 83 undoubtedly tuberculous cases, nearly 5 per cent. did not react, and this failure was due in at least one case to the small doses given and to the establishment of a tolerance. The tuberculous cases which failed to react were, so far as he could ascertain, far advanced in the disease. In 12 apparently healthy individuals, 1 reacted. In 64 supposedly non-tuberculous diseases, 18 per cent. reacted. From a study of these cases, Head thinks it probable that no pathologic state reacts to tuberculin in any marked per cent., if at all, except those caused by the tubercle bacilli, and that 92 per cent. of pulmonary tuberculosis shows the reaction. In 71 per cent. of the cases of enlarged cervical glands; in 88 per cent. of the cases of acute pleurisy; in 100 per cent. of the cases of chronic pleurisy; in 91 per cent. of the cases of tuberculosis of the joints; in 100 per cent. of the cases of tubercular peritonitis; in 100 per cent. of the cases of Addison's disease, and in 100 per cent. of the cases of lupus, the reaction occurred.

79. **Bladder Drainage Through the Catheter.**—The conditions in which Cabot has found catheter drainage of advantage may be classed as follows: 1. Injuries of the urethra, either the result of accident or of operation, in which it is desirable to conduct the urine past the seat of injury in order that it may not by its irritant qualities interfere with the process of healing, and to prevent the absorption and toxic effects of the urine. 2. Hemorrhages in the urethra, in which the catheter assists in checking the bleeding. 3. Obstructive lesions of the urethra, which lead to inflammatory conditions of the bladder and kidneys, and in which systematic catheterization does not bring relief. The action of the catheter after an operation on the urethra or any injury to its walls is twofold. 4. It acts as a core or stem around which the urethra re-forms itself, a very desirable effect. The more important action, however, is to protect the wounded surface from contact with the urine and the dangers of its absorption. In order that this shall be satisfactorily effected, it is necessary that the outflow of urine shall be constant. The catheter should never be obstructed. He points out the value of this method also in cases of hypertrophied or obstructed prostate and the quick improvement of the urine under this method. It is useful also in cases where the gradual emptying of an overdistended and partially paralyzed bladder is required. If the urine is drawn off too rapidly, hemorrhagic cystitis may follow and extend itself to the kidneys. He thinks the soft red rubber catheter is the best. If it can not be introduced or the caliber is too small and a stiffer instrument is required, he thinks the English gum elastic catheter with wire stylet the most satisfactory. One thing of the greatest importance is that it shall be properly adjusted so as to produce constant drainage.

80. **Auto-Intoxication and Epilepsy.**—The title of Futcher's paper, "What Evidence Have We in Support of the Theory that Epilepsy is Due to an Auto-Intoxication?" indicates its scope. It is simply a statement of the theories on this subject without a positive expression of opinion.

81. **Membranous Conjunctivitis.**—McDavitt reports 4 cases in one family, of membranous conjunctivitis with more or less inflammatory symptoms and weakness, without detection of the diphtheritic bacillus. Two, at least, of the cases were treated with antitoxin and these appeared to be the most profoundly affected systematically.

82. **Early Recognition of Catarrhal Disorders.**—The necessity of early recognition of catarrhal disorders in children is emphasized by Scheppegrell. The pathologic conditions most frequently found requiring attention are the enlargement of the pharyngeal tonsils and the various forms of rhinitis, and the earlier these can be treated when treatment is necessary, the better. Of course, not every case requires treatment and it may tax the judgment of the physician to decide. The condition which presents the greatest possibility of injurious after-effects in children is purulent rhinitis. The muco-pus secreted is often retained in the nasal passages and by its irritation, directly and indirectly by forming a culture-ground for pathogenic germs, it causes serious injury to the normal structure of the nasal passages. Scheppegrell holds that it is frequently a forerunner of atrophic rhinitis and similar conditions. Aural affections of insidious development are often started by these conditions and serious injury to the hearing may follow. While adenoids in the nasopharynx atrophy toward adult life, they can in the meantime produce irretrievable harm. Parents should be instructed as to the importance of this matter.

83.—See JOURNAL, August 26, page 548.

84. **Yellow Fever in New Orleans.**—Souchon reviews the past records of yellow fever in New Orleans and especially the management of the disease in 1879. Here begins the first period, with the exception of that from 1861 to 1865, when there was practically no intercourse with yellow fever regions, in which yellow fever was not endemic every summer in the city of New Orleans. From 1880 to 1884 outside intercourse was free, but yellow fever failed to appear. He asks: Is it not just and reasonable to say that this result was the effect of sanitation, crude and primitive though it may have been?

85.—See JOURNAL, August 26, p. 548.

86. **Atypical Forms of Pneumonia.**—The types of pneumonia that sometimes occur with symptoms that baffle the diagnosis of the experienced practitioner are discussed by Palier. He considers them under six heads, illustrating each form by detailed cases: 1. As to gastric pneumonia, in almost every case of inflammation of the lungs there is more or less disturbance of the abdominal viscera, but in some few these are so prominent as to give the impression that the main trouble is situated lower down in the abdomen. The case reported is of interest on account of complications with empyema and the severe abdominal disturbances. Both of these complications are discussed at length, and the author remarks that when in some disorders the symptoms are out of proportion to the extent of lungs involved, as in this case, empyema may be thought of, and diagnosis by the hypodermic needle is advisable. As regards the abdominal disturbances, he suggests a theory that the involvement of the pneumogastric, through reflex irritation of the medullary centers, is responsible for both abdominal disturbances and

cardiac failure in pneumonia. He thinks this a more plausible theory than the toxemic one, attributing the cardiac failure to toxins acting on the cardiac nerve-centers. 2. As to cerebral pneumonia, Palier remarks that there is not much new to be said on this subject, since cerebral symptoms have been described by various authors, but one of his cases resembled tubercular meningitis so closely that it could easily have led to a false diagnosis. 3. Under "wandering pneumonia," he mentions cases in which exacerbation of symptoms occurred after a crisis and a period of defervescence, the pulmonary inflammation passing over to a new region and starting a secondary attack. 4. Under the designation, abortive pneumonia, he refers to cases lasting only a few days and terminating in recovery before full manifestations of the physical signs. In only one case has he seen a fully developed pneumonia terminate on the third day, and he rather doubts the claims of those who specify any form of treatment that will abort the disease in that time. In these cases, the physical evidence not being sufficient, the diagnosis of pneumonia is often very uncertain and, as recovery is the rule, post-mortem verifications are out of the question. 6. Under the head of chronic pneumonia he refers to the croupous and catarrhal pneumonias, subacute from the onset and lasting for months and sometimes for years, and very frequently ending in recovery. Sometimes these cases are attended with hemoptysis, and they frequently simulate pulmonary tuberculosis so closely as to be mistaken for it by competent physicians. He reports two cases that he thinks must be regarded as subacute or chronic cases of croupous pneumonia of this type, and mentions others. The other points of difference between this subacute chronic croupous and catarrhal pneumonia and tuberculosis of the lungs is the emaciation which is always present in the latter and not well marked in the former. Microscopic examination of the sputum is required to make the diagnosis certain. He alludes also in connection with this condition to the unresolved acute pneumonia in which the resolution after the typical acute attack is sometimes delayed for weeks. 6. As to masked pneumonia, while ordinarily the physical signs in pneumonia do not appear until some time after the fever, there are cases in which they do not show themselves until after the crisis, and even then imperfectly. He reports a case in which all the appearances were those of the disease, so that even the women in the house recognized it, but careful and repeated examinations did not detect the physical signs until the seventh day, and the patient was well on the ninth. A case in which the physical signs appeared on the sixth day is reported by Francis Minot and then they were distinct. As regards prognosis, he takes a favorable view in children in whom most of his cases occurred. He believes that croupous pneumonia involving not more than two lobes of the same lung will naturally terminate in recovery if not too much interfered with. Considering that most of his patients lived in unhygienic surroundings, and were without the elaborate nursing that is sometimes considered necessary, this is a favorable showing. The duration of the disease in his ordinary cases was from six to ten days. The treatment was liq. am. acetatis combined with sweet spirits of nitre in minimum doses; no coal-tar antipyretics unless the temperature rose above 104 degrees, and then a few small doses of phenacetin to reduce it a degree or two; calomel in tablet form in small doses, for constipation; about the fifth day, if there was much prostration, small doses of tincture of nux vomica repeated as required. In adults, tincture of strophanthus and digitalis may be added as needed. In delayed resolution and difficult cough, etc., carbonate of ammonium is given with the nux vomica with advantage. Washing the body with alcohol and water frequently reduces the temperature without drugs. No local application was used on the chest and very little alcoholic stimulant except when prostration was great, and then with doubt as to its efficacy when used. The diet consisted of boiled milk, barley or oatmeal water, according to the condition of the alimentary canal. Palier believes that the golden rule in the treatment of pneumonia in children is to interfere as little as possible except when interference is absolutely necessary.

87. **Hysteric Blindness.**—Muzzy remarks, in commencing his article, that he has found much difference of opinion as to the frequency of hysteric affections of the eye. Most writers say that young girls are the most frequent victims, but experience does not support such a statement. Two points, not mentioned by de Schweinitz, are the suddenness of the onset and the anesthesia of the conjunctiva and cornea. The most frequent form is concentric contraction of the visual field, and the next most frequent is disturbance of the color sense. Functional paralyses have been described, also diplopia and in a few cases hemianopsia. One author, Lagrange, elaborately describes hysteric uniocular diplopia. This may occur in two ways, in most cases, from spasms of accommodation causing two images, of which in a few cases irritation of the visual centers is the cause. It must be remembered that hysteric manifestations may complicate actual organic diseases of the brain and embarrass the diagnosis. Treatment is generally unsatisfactory.

88. **Seasickness.**—Remarking that the amount of suffering from seasickness renders the subject one of some importance, DeVries says that it is clearly a functional disease of the nervous system due to shock produced by the motion of the ship. The common notion that it is beneficial is altogether wrong, as it is decidedly injurious. Vomiting is a symptom of concussion of the brain; seasickness is a series of mild concussions. One of the first symptoms mentioned by the author is not often described as such, namely, an inordinate appetite developed as soon as rough water is encountered, to be quickly followed by the different stages of seasickness. As regards treatment, in some slight cases a prolonged even inspiration as the vessel rises, followed by expiration during descent, thus controlling the movements of the diaphragm, is efficacious. He does not speak well of the bromid treatment recommended by Beard and others. The plan he recommends is thorough purging before embarking, followed by 20 grains of sodium bromid at 7 a.m. on the day of sailing, and repeated one hour before the vessel sails. Keep on deck during the voyage, except at meals and during sleep. Indulge freely in Vichy and Apollinaris water. In those who have not undergone this preliminary treatment, aromatic drinks, lemonade, champagne and ginger ale are of great value. The horizontal position is generally most agreeable. Substantial and succulent food easy of digestion, and stimulants, are indicated. Avoid cold food. Nitrite of amyl has been tried with success and should be given in full doses and repeated if necessary. He has not found cocain beneficial, though it has been recommended. In very severe and obstinate cases, after everything else has been tried without success, the patient's very feeble condition and the constant vomiting call for morphin, but it must be administered with great care. The patient should be kept under its influence at least twenty-four hours.

89. **Epiphyseal Separation of Ends of Humerus.**—Lucid describes the condition of epiphyseal separation of the ends of the humerus, which is liable to occur in young people. After noticing the anatomy and mechanism of the displacement, he speaks of the diagnosis. The first symptom notable in separation of the upper epiphysis, and distinguishing it from fracture, is the abrupt projection about one inch beneath the coracoid process, caused by the upper end of the lower fragment of the bone. Next comes crepitus of a softer nature than in fracture. Thirdly, the end of the shaft is round and smooth, not sharp, having the form of a low cone. Again, there is the immediate recurrence of the deformity when the means employed for its reduction cease to be in operation. The most important practical point is that the accident is apt to be followed by arrest of development, if not properly reduced. The common error in treatment is the severe and protracted extension used to reduce the relaxation, which is effective only as long as it is maintained. The most effectual mode of reduction is by carrying, with moderate extension, the humerus forward and upward. The head will roll upon the glenoid surface in any motion of the arm until restrained by its capsule. Now, then, while the humerus is still back of the central line of the body, the head is rolled upward, and long before the humerus is brought up perpendicularly, the capsule at the lower border of the head has become tense, thus holding it firm; while the humerus, being thrown up

and restrained by its muscles, slides the diaphysis backward, producing a coaptation of the corresponding facets. In other words, the reduction is effected by carrying the arm forward and upward, using moderate extension to the perpendicular line with the body.

The retention is effected by moderate extension while bringing the arm down to the side, and maintaining this slight extension until dressings for the purpose of continuing it are applied. Moore's method, which consists of a wooden splint fastened to the outer side of the arm, resting its lower end in a strip of adhesive plaster, while the upper end projects two inches above the shoulder, with a notch through which a bandage is passed under the axilla for extension, fulfills easily and promptly the indications.

The diagnosis of separation of the epiphysis at the lower end of the humerus is easy on paper, but very difficult in practice, owing to the swelling. In this condition, the X-ray, when available, offers the most valuable aid in early diagnosis. Lucid recommends the use of an Esmarch bandage starting at the hand and going slowly but firmly up the forearm over the swollen elbow-joint to the arm-pit. Leave it on for ten or twelve minutes, and then gently remove it, beginning at the hand and leaving a few turns at the top still in place. The elbow thus exposed will be pale, bloodless and no longer swollen, and the diagnosis can be made with ease. The lower end of the upper fragment will be tilted forward and the elbow-joint pushed seemingly backward with limited flexion and extension of the forearm. The lower end of the upper fragment has greater width than any fracture at the base of the condyle, and the line of separation is nearer the end of the bone. For reduction, grasp the forearm and make extension with the knee in the bend of the elbow, adjusting the fragment with the free hand. Now remove the remaining bands of the Esmarch bandage and apply a posterior and anterior splint with pressure anteriorly over the seat of separation. Passive motion should be resorted to about the seventh or eighth day, by the surgeon himself, then about the twelfth day and after that every other day until the twentieth. The fragments should be held in apposition and motion made very cautiously. If after the twenty-second day complete fixation and extension can not be produced, the adhesion should be broken up under anesthesia. It is often advisable after provisional callus formations and the fragments are in position, to bandage the arm, one day extended and the next day flexed.

91. **Epileptic Eye Strain.**—Capps reports two cases of epilepsy relieved by the use of atropin and suitable glasses; no return of the epilepsy in one case for a year and in the other for five months at the date of writing. He insists on the importance of consulting an oculist in epilepsy in children.

93. **Roentgen Ray in Incipient Tuberculosis.**—Williams reports the results of examinations of 165 patients with incipient tuberculosis, by the Roentgen ray. The diagnosis of tuberculosis was confirmed by the discovery of the bacillus or the reaction of the tuberculin test. He groups his patients into two classes: those with slight physical signs but no râles, and those without physical signs. He reports cases of each. He thinks that the value of the Roentgen test is that it gives an early warning when other signs are not prominent, and in some cases it may correct a mistaken diagnosis of tuberculosis from apparent physical signs. It is also of value in cases of tuberculosis with pleurisy and effusion, with bronchitis and emphysema. In two cases the X-ray failed, though the other tests demonstrated the disease, but generally it is the most efficient means of diagnosis. The fluorescent screen is more reliable and convenient than photographs in these examinations.

94. **Climate in Renal Diseases.**—The causal condition that has been recognized in certain kidney troubles is here discussed by Walker, who finds that the principal element is soil dampness, and he suggests a residence in a dry sandy soil as one of the most valuable means of treatment.

95. **Inguinal Hernia, a New Operation.**—In spite of the excellent results of Bassini's method, it has occasional failures, and Beck here attempts to improve on it by still further fortifying the abdominal walls. His method is as follows: The incision is made down to the internal surface of Poupart's ligament alongside the outer margin of the rectus muscle, exposing its lower third down to the shelving portion of Poupart's ligament. The sac is isolated from the cord, and ligated and cut off within the internal ring. While the cord is held away the cut aponeuroses are dissected backward and an oblique incision is made which divides the lateral fibers of the rectus muscle transversely, to the extent of about one-third of its width, a little below the lower third of the muscle. The incised fibers are then so far severed from the remainder of the muscle that their upper portion, when turned downward, will reach Poupart's ligament without any considerable tension. This turned flap is now fastened to the conjoined tendon at one side, and to Poupart's ligament on the other, with formalin catgut, after the cord has been placed on it so that the cord rides, as it were, on the muscular flap. The gap caused by the resection of the flap is now covered by uniting the outer margin of the rectus muscle with the broad abdominal muscles. Then the cut aponeuroses are united above the cord by a continuous suture, thus forming a very strong posterior muscular wall, which in large and direct hernias may be of importance. It may also be that the removal of the sac may thus be rendered unnecessary in small hernias.

In the cases in which he used this method the results have been exceedingly satisfactory. As he says, however, the real value can only become evident after more experience and observation. The question of the gap as well as that of the division of the nerves and of cutting off some of the blood-supply has been well considered, and the objections seem to be only theoretic.

96. **Concerning Colorado.**—The climate of Colorado, and its advantages in consumption, are very fully stated.

97. **Cheyne-Stokes Respiration.**—The value of Cheyne-Stokes respiration as a diagnostic sign of the early stages of interstitial nephritis is here pointed out by O'Donovan. He has records of three cases in which these symptoms occurred during sleep, at a time when there was no albumin in the urine, or other evidence of any departure from perfect health, and in all three interstitial nephritis was developed later. The phenomena occurred irregularly and only at night and were not influenced by any particular posture of the individual. He asks for observations in large hospitals for this symptom occurring in the early stage of disorders, as there night nurses have opportunity for observation.

99. **Floating Liver.**—Floating liver is defined by Einhorn as a liver that has fallen downward and can be replaced by manipulation. Its etiology is obscure. He discusses it at some length, reviewing various alleged causes. He thinks that an enlargement of the abdominal cavity is of great significance, but it must be combined with other causes. As to the frequency of the condition, he has found it in 30 out of 804 patients suffering from digestive disorders, or about 3.7 per cent. It appears to be more frequent among women than men, their percentage being about 5.6 to 2 per cent. for the male sex. The conditions of floating liver and floating kidney often coincide. In about one-half of his female patients this was true. As regards the symptomatology, he divides it into five groups: those in which no disturbances are noticed; dyspeptic cases with indefinite digestive symptoms and feeling of weakness and nervous symptoms; cases of hepatalgia with almost constant pains in the right side of the abdomen, often radiating toward the back and shoulder-blades, and sometimes subsiding with the recumbent position—sometimes drawing and tearing pains are felt; cases of hepatic colic with symptoms like those of gall-stones, but seldom jaundice; and lastly, asthmatic cases in which a feeling of fulness and constriction in the upper abdominal region associated with slight dyspnea is especially prominent. He reports cases of some of these different groups. The diagnosis by palpation is described in detail and the differential diagnosis discussed. The condition may be mistaken for renal tumor or hydronephrosis, or it may be diagnosed when the real disturbance is liver enlargement or other conditions filling up the abdominal cavity. It must be shown in the diagnosis that no intrathoracic organ is disordered so as to force the liver downward. The treatment resembles, on the whole, that of floating kidney; the use of well-fitting abdominal bandages

to support, gentle massage, diet, exercise, etc. He does not favor surgical treatment. In conclusion he speaks of the possibility of mistakes in the diagnosis from appendicitis, gallstones, etc., and states that the appropriate treatment is usually crowned with brilliant success.

100. **Typhoid Fever.**—The practical treatment of typhoid fever, according to Taylor, is: first of all, rest; avoidance of purgatives; care as to diet, none at all being given for the first twelve or twenty-four hours, especially if the patient is nauseated. After this feed three times a day with soft food. Never allow your patient to eat anything he is obliged to masticate. When the temperature rises above 101, he gives antifebrin, and if restless at night, bromidia. If the tongue is dry, he gives for a day or two small doses of turpentin in capsules, or creosote and carbolic acid and tincture of iodin. He has the patient's mouth cleansed three or four times a day, and directs him to chew tolu an hour or two every day until the tongue becomes moist, and take as much water as his stomach can conveniently absorb. Use colon irrigation with warm sterilized water, or if diarrhea is present, add a little boric acid or permanganate of potassium. Sponge the patient's body once or twice a day with warm water, or if a bath-tub is available, immerse for ten to twenty minutes. He does not use cold water and finds warm water sufficiently antipyretic. If not enough water is taken by the stomach, he gives an injection, into the colon, of about a pint of decinormal saline solution, after it has been irrigated. The above is for treatment of typhoid without complications. When it occurs in patients suffering from other troubles, the treatment is slightly modified, especially when gastric disturbances pre-exist. Digestion must be carefully watched. The food must be small in amount, easily digested, and slow to ferment. He thinks the white of an egg suits this class of cases better than any other food. Milk is unadvisable for patients with weak digestion. antiferments may be given if necessary. If the stomach is irritable and there is hyperchlorhydria, give sedatives just before food. A cup of hot water and a large dose of bismuth will usually prove efficient. Colon irrigation and baths are used as in the former case. The author concludes as follows: By promoting digestion and preventing indigestion, and keeping the alimentary tract from the stomach to the anus free from absorbable toxins, we will have no necessity for an average temperature of over 100-101 F., and a pulse of 72 to 80 per minute. The sum total is, favor digestion, prevent absorption of toxins, and promote thorough elimination of the toxins unavoidably absorbed.

101. **Facts and Fallacies of Uranalysis.**—The fallacies pointed out by Schaefer are the dependence on the boiling test for albumin, which he gives reasons for believing misleading; the importance attributed to phosphoric and uric acid elimination, and also that of calcium oxalate. He also speaks of the difficulties of the sugar test and the need of skill in making it, and the overestimated significance of tube casts. Only the true casts, consisting of a uniform, transparent, gelatinous matrix, to which other elements, such as epithelial cells, red blood-corpuscles, leucocytes and crystalline or amorphous forms, may accidentally have been attached, should be regarded as of great diagnostic value. He agrees with von Jaksch that Ehrlich's diazo reaction has little clinical significance.

103. **Intussusception.**—After discussing the subject of intussusception and operation for its relief, of which he thinks disinvagination and reduction is the ideal operation and the one promising greatest success, Munro analyzes the reported cases of resection and reports two personal ones, in one of which recovery took place.

104. **Carcinoma.**—Councilman describes the mode of growth of carcinoma, and says that as regards its cause, we enter the domain of theory. The influence of trauma he rejects, as also the theory of Thiersch, that it is due to a degeneration of the connective tissue. Cohnheim's theory of its being due to embryonic residues included in the normal growths has more in its favor, but he evidently does not accept it fully, nor the parasite theory which is now so much to the front. He points out the fallacies of statistics of carcinoma, from which its excessive increase has been inferred, and says that the more accurate statistics of life insurance do not give evidence of its increase. It is not improbable that carcinoma may be due to parasites, but if so the invasion must take place in the latter half of life, in places least exposed to ordinary invasion. The parasite must enter every cell, causing it to proliferate, and must be carried with the cell to other parts of the body to repeat the process. He thinks this theory must be taken up and definitely proved by investigation, or set aside.

108. **An Emergency Obstetric Case.**—Young reports a case of pregnancy terminating in eleven months, the child's head being so large as to require symphysiotomy. The operation though done under difficulties, was a success.

110. **The Rocky Mountain Region.**—Van Zant sums up the advantages of the Rocky Mountain region for the treatment of tuberculosis, especially in its incipient stage. Cases where cavities have occurred are not well suited to this climate. He notices also the following other disturbances, as affected by the climatic conditions: "Inflammatory rheumatism is quite rare here, whereas muscular rheumatism and neuralgias are quite common. The latter are apparently due to the sudden changes of diurnal temperature. Malaria is never seen except in imported cases. Asthma, frequently though not by any means invariably, disappears as if by magic. Among those reclaimed from this dread disease are some of Denver's most prominent doctors. Pneumonia, while no more prevalent here than elsewhere, runs a much more rapid course, the crisis often being reached in two to four days. Gastrointestinal disorders among infants are very much less prevalent than at lower altitudes. Sunstrokes are unknown."

111. **Suicide.**—Sweringen notices the increase of suicide, and lays it to the social conditions, which he thinks should be reformed.

114. **Contagion and Infection.**—Grigg discusses the significance of these two terms, quoting various authorities as to their usage, and concludes that from his standpoint "an infectious disease is produced by a pathogenic micro-organism that lives and propagates in a suitable soil on the outside and independent of man, but when taken into the system and absorbed is capable of producing certain diseased conditions which are not directly transmissible from patient to host; while a contagious disease is produced by a pathogenic micro-organism that propagates in the afflicted patient and which, after escaping from said patient without undergoing further change and on being taken into the system of a prospective host and being absorbed, is capable of producing certain diseased conditions and is transmissible from patient to host either directly by contact or indirectly as by fomites." He thinks it is of some importance to make this distinction clear.

115. **Nervous Hemorrhages.**—Toms reports a case of a man 33 years of age, with neurotic antecedents, who had been injured by an assault and by accident, who suffered from attacks of hemorrhage, apparently originating somewhere in the buccal cavity. There were various nervous symptoms and there was a history of delirious spells in the past. There were hysteric stigmata. Physical examination was negative, as was also uranalysis. He reports the case as of interest on this account.

117. **Inheritance.**—Conklin discusses the subject of heredity from the point of view of a zoölogist, and maintains, in general, Weismann's theory that acquired peculiarities are not inherited.

FOREIGN.

Progres Medicale (Paris), August 19 and 26.

Nature of Acute Leukemia. F. RAMOND.—The present state of our knowledge in respect to acute leukemia is summarized by Ramond from the communications to recent congresses, etc., as follows: The infectious stamp of the syndrome of acute leukemia is apparent. Everything about it suggests an infection invading first the ganglia and then spreading rapidly to all the viscera. But on the other hand, the composition of the blood and the histologic lesions of the organs are not all like those observed in an infection in general. The changes in the blood have been frequently described. The hypertrophied ganglia are formed of a sort of hyperplasia of the normal reticulum with a multitude of small mononuclear cells in the meshes, associated or not with a few large mononuclears, with or without granulations, according to the variety of leukemia under consideration. The liver and kidneys have nothing of

the embryo infiltration so common in infections, but present more complex formations, recalling in every respect His' lymphoid tissue; small nodules with the structure of embryo lymphatic tissue, that is, a delicate reticulum with an infiltration of small cells in the interstices. This formation of lymphoid tissue, characteristic of lymphatic leukemia, is encountered in most of the viscera, also in the bone-marrow, subcutaneous cellular tissue, etc. Myelogenic leukemia differs by a few secondary peculiarities. These anatomic lesions bespeak a non-infectious origin, but we must not be too absolute, as it is possible that we are not yet acquainted with all the reactions to infection, and that certain micro-organisms may influence the organism in a special manner. Recent research on the sporozoöses shows that besides the bacterial infections there are others, due to the invasion of the organism by sporozoa, which differ materially from the former. Cultures and inoculations in leukemia have resulted negatively or conflictingly. The writer himself experimented with aërobic and anaërobic cultures on every known medium and with every animal in the laboratory, collodion-sacs, etc., without any results suggesting the presence of a bacterium or sporozoön in any manner.

Septicemia of Otitic Origin Without Thrombophlebitis of the Sinuses. STANCULEANU AND BAUP.—Two observations of suppurative otitis of the middle ear and mastoiditis terminating in fatal septicemia, are described in this communication, noticeable on account of the fact that trephining and évidement, and ligature of the jugular had no effect on the course of the infection unless perhaps to give it impetus. In both cases the liver showed degeneration, tumefaction of the cells and fatty degeneration of certain lobules. An extremely virulent streptococcus was found in the blood; no lesions in the venous system nor in any sinus. The cases suggest as etiology the possible passage of the microbes through the walls of veinules or sinuses into the circulation, with a hepatic predisposition to infection.

Annales de l'Institut Pasteur (Paris), June.

Role of the Leucocytes in Immunization Against Arsenious Acid. BESREDKA.—Rabbits can be immunized against fatal doses of arsenious acid by accustoming the leucocytes, which is accomplished by fractioning the fatal dose or by injecting a small dose of the poison twenty-four hours before the fatal dose. The serum of these animals has preventive and antitoxic properties against a dose of acid fatal in forty-eight hours. The antiarsenin is probably not an arsenical compound; the arsenic is not dialyzable. The antiarsenin acts on the toxin by the intermediation of the leucocyte system. Suppressing this, as when the poison is injected into the brain, the action of the antiarsenin is paralyzed.

La Parole (Paris), No. 6.

Practical Applications of Experimental Phonetics. ROUSSELOT.—The movements of the tongue and larynx in speaking are registered by a simple apparatus consisting of a rubber olive held in the mouth, a tube, drum and an index. The subject can see for himself in what way his movements differ from normal, and corrects them with a little exercise. This method has proved extremely effective in overcoming defects in pronunciation, teaching languages, and curing stammering, paresis of the vocal chords, etc., combined with open-air life and the use of the spirometer to test and increase the breathing capacity. In pronouncing *tar* for instance, with the olive in the mouth, the index springs quite a distance, but does not move when *car* is pronounced. The larynx signal is a small sleigh-bell held by a weak spring against a thin metal plate, the bell tinkling when the plate is applied to a vibrating larynx. Another contrivance is a wire bent into the outline of a small hoe, which is placed over the under teeth to teach the pronunciation of the liquid *n* as in *onion*, the tongue kept in contact with it.

Revue Herb. de Laryngologie, etc. (Bordeaux), August 19.

Ozena and Sinusitis. P. JACQUES.—"Idiopathic ozena is a myth," the writer declares. Ozena is merely the secondary consequences of sinusitis of one or more of the nasal fossæ. All therapeutic measures for ozena to date merely respond to the symptomatic indication to combat the atony resulting from sclerosis of the pituitary body due to irritation from sinusal secretions. Moure has noted 32 cases of verified sinusitis in 114 of ozena and if we were able to examine the sphenoethmoidal system as easily as the frontomaxillary, this coincidence would probably be found the rule. Each sinus should be minutely interrogated in turn, he concludes, in every case of ozena.

Annales de la Societe Med.-Chir. de Liege, June.

Autovaccination in Treatment of Pneumonia with Digitalis. G. CORIN.—Six years of successful experience leads Corin to affirm that "expectant treatment of pneumonia is illogical and dangerous when we have in digitoxin a safe, reliable specific to abort the disease." Digitalis is unreliable, but digitoxin, in spite of its formidable name, can be depended on to strengthen the heart and prevent stasis in the lung and thus check the morbid process. The reinforcement of the activity of the heart prevents any considerable absorption of the toxic products secreted by the pneumococcus, which thus dies poisoned by its own excretions. Or possibly the small amounts of the toxic products which the digitoxin allows to be absorbed vaccinate the subject from the focus of infection, while the pneumococcus culture becomes less and less virulent to final extinction. Corin compares the action of digitoxin to that of Pane's serotherapy and considers them probably identical in the autovaccination produced. Three milligrams of digitoxin is the dose he gives an adult, and the effect is not apparent for twenty-four, possibly thirty-six to forty-eight, hours, afterward. The fall of the pulse is the first expression of the action of the digitalis, and it precedes the fall of the temperature, the first expression of the action of the vaccin.

Berliner Klinische Wochenschrift, August 7, 14, 21.

Technic and Hardening of Sections of Brain. E. SIEMERLING.—With a microtome specially constructed Siemerling cuts series of sections in any direction and hardens with the Mueller-formol mixture; two parts of the 40 per cent. solution of formol to 100 parts Mueller. Study of sagittal sections throughout the entire brain shows great variation in the number of tangential and especially of horizontal fibers in the cortex. They are most numerous in the convolutions of the temporal lobe, and next in the central convolutions and the convolutions at the calcarine fissure. This fact should be borne in mind in studying fiber disappearance in paralysis.

Primary Retroperitoneal Echinococcus in the Abdomen. F. KAREWSKI.—In one of the two observations of this rare localization reported, obscure symptoms resembling lumbago had existed for years, and a tumor finally appeared during pregnancy, in the left kidney region, with evidences of catarrh of the bladder. Operation disclosed a suppurated echinococcus sac which had developed on the kidney and extended behind the descending colon. In the other case the sac had developed at the emerging point of the plexus ischiocruralis and had been the cause of ischialgia during twenty-five years. Complete recovery in each followed after extirpation of the sac.

To What Extent Can We Sterilize Our Hands? GOTTSTEIN and BLUMBERG.—"Three years of tests and experiments have established that asepsis of the hands can only be realized in about 75 per cent. of the attempts, and that in tincture of soap we have the most effective disinfectant for the hands yet discovered." (See JOURNAL, July 8, p. 100.) Tricot gloves, frequently changed during aseptic operations, are the best guarantee of asepsis. They act as a filter, and frequently changing the filter removes the accumulated germs from within and without. Rubber gloves are too easily torn for general surgical operations but are indispensable in septic conditions.

New Method of Applying Long-Continued Powerful Galvanic Currents Without Injury to the Skin. FRANKENHAUSER.—This is a preliminary communication from Senator's clinic, and describes a method by which the current can be applied to the tissues with none of the cauterizing effect which has been such a disadvantage hitherto in long-continued applications of electricity. The corrosive substances are washed away as they are generated, by a continuous stream of physiologic salt solution. A still simpler method is to have a sodium solution at the anode and a hydrochloric-acid solution at the cathode, or any sodium or chlorin salt respectively, in which case no corroding ions are generated. Metallic electrodes are discarded on account of their chemical action and sheets of a prepared felt are used. By this means with an electrode of twenty square centimeters 580 coulombs can be applied at one sitting.

Deutsche Medicinische Wochenschrift (Berlin), August 17, 24 and 31.

Rheumatic Mental Disturbances with Acute Rheumatic Chorea and Study of Choreic Movements. M. JASTROWITZ.—In the two extremely severe cases studied in detail, it was evident that the agent causing the disease had directly attacked the portion of the nervous system to which Jastrowitz ascribes the various forms of choreic movements, that is, the entire motor part of the central nervous system, weakening and irritating it. In one, the cortex was first affected (first stages of the psychosis), then the joints, and then the motor centers and tracts (chorea), and the clinical phenomena varied as the various regions became involved in turn. In the second case the course was more rapid and violent, and there was mixed infection with the streptococcus pyogenes, which may possibly have favorably influenced the psychosis and chorea, but induced malignant endocarditis and thrombosis of the femoral artery. Both recovered. He also ascribes the choreic movements in idiocy to a "weak brain life," a general condition affecting the motility.

Extirpation of Cancerous Rectum and Sigmoid Flexure. K. SCHUCHARDT.—The coccyx method followed by our Stettin confrère allows the complete extirpation of all the parasacral tissue with its possibly infected lymphatic glands along with the rectum, to the promontorium and beyond. The patient being on his back in a modified, exaggerated Trendelenburg position, buttocks extremely elevated, legs drawn up and fastened, the coccyx is divided with a Gigli saw and the rectum mobilized and excised with ease and no hemorrhage, proceeding as for a hysterectomy, after a circular incision. With a ring carcinoma he makes a lumbar colotomy a few weeks previously. Not until the entire field has been inspected, drain inserted and small gauze tampon left in the sacral space does he cut into the rectum and suture the central end to the skin. He does not attempt to save the sphincter, and in case the vagina is involved he proceeds to a bilateral paravaginal incision such as he advocates for hysterectomy, extending it through the musculus levator ani on both sides as high as required. In one case he succeeded in mobilizing 40 cm. of the rectum, extirpating 30.

Dyspepsia From Motor Insufficiency of the Urinary Apparatus. O. ROSENBACH.—In these days of specialism there is danger of attributing to the organ which appears most affected disturbances which are primarily due to an insidious morbid process elsewhere. This is especially liable to occur with the dyspepsia which careful observation will trace to a motor insufficiency of the urinary apparatus—urokinetic dyspepsia—as Rosenbach establishes in this study concluded from the two preceding numbers. The cases are always men at the end of the fifties or in the sixties. Disturbances in the digestion appear at intervals, first noticed as a distaste for meat, a disagreeable, stale taste in the mouth, frequent pyrosis or eructations of odorless gases, efforts to vomit, an uncomfortable sensation in the jaws and salivary glands, sometimes involving the head. There is usually lassitude and great weakness in the lower extremities, progressive debility and emaciation from lack of nourishment. In some cases chills are noted at irregular intervals, usually in the evenings; temperature low, no fever except in advanced stages; frequent desires to urinate, especially during the night. Some complain of a sensation of oppression in the lower abdomen, desires for, and incomplete, defecation. The tongue is seldom coated, usually only in severe cases, when there is a blackish discoloration at the rear of the tongue and slight fever. Subjects who used to smoke much have a distaste for tobacco and liquor. Salivary secretion is diminished and gums are dry. Stomach contents are negative; there is occasionally absence of free HCl. Palpation discloses nothing abnormal, except that occasionally in certain positions, the bladder is noted reaching to the navel, long and tapering. The urine contains no albumin and has merely the slightly darker color and higher specific gravity usual in digestive disturbances. But a special characteristic is that it decomposes with exceptional rapidity and disengages ammonia with a strong odor. Also, as the urine stands, quantities of mucus are deposited in the sediment, and the microscope shows a remarkable abundance of white corpuscles. The subject finds it impossible to retain urine long and even when the bladder reaches to the navel, the amount contained is not over 200 to 300 c.c. The prostate is usually enlarged at this age; the essence of the affection is a paresis of the motor system of the urinary apparatus. An important point in the differentiation is that catheterization is easy and painless. The bladder disturbances are so slight that patients never even refer to them. If neglected and long continued, serious nephritic complications may appear, but in the early stages, when the sphincter is alone involved, treatment is invariably successful. It consists in a general tonic and kidney-resting régime, warm baths, rest in bed, refraining from liquids and light, cautious massage of the abdomen, ureters and bladder region. Faradization and ice-bags, nux vomica or ergotin have also proved useful. Beer and sour wines must be strictly avoided.

Zeitschrift f. Geburtshilfe u. Gynakologie (Stuttgart), xli, 1.

Etiology of Paralysis of the Upper Arm From Injury at Birth. J. SCHOEMAKER.—Experimentation on infants' cadavers has demonstrated that "Erb's point"—the emerging point of the sixth cervical nerve between the scaleni, where the roots of the brachial plexus lie—can be directly injured by compression with the forceps, and also by traction on the head or on the lifted arm during version, indicating the necessity of special caution

Wiener Klinische Wochenschrift, August 17.

Molluscum Fibrosum. P. MERKEN.—The argument in favor of the congenital nature of this affection, advanced by Merken, is based on the facts that seventeen cases are on record which are known to be congenital and that the influence of heredity is unmistakably apparent in many others; also that by far the largest number develop in youth and especially in early childhood; also its frequent coincidence with pigmented patches. He calls attention to the frequency of coexistent mental disturbances. In his opinion it is a deformity similar to nevus in many respects, but differing by its progressive character, which stamps it as a neogrowth—generally benign but with a tendency to malignancy—the congenital deformity consisting in the tendency of the connective tissue to unlimited proliferation.

Centralblatt f. Nervenheilk. u. Psych., No. 1.

Continuous Baths for the Insane. E. BEYER.—The experience at Heidelberg has been very favorable to these baths or water-beds, transferring the patient from bed in the morning to the bath—temperature, 28 R.—and from the tub to bed again at night, with no other procedures or examinations. It is especially beneficial for the rapid curing of decubitus, phlegmons, etc., and is indicated for all uncleanly, restless, destructive or menstruating patients. It has proved invariably successful in mania. No mechanical means are used, but a dose of hyoscin at first may be found useful. Each ward should have its separate bath-room with tub and attendant to each two or three patients. Cells and isolating-rooms will then be found unnecessary.

Zeitschrift f. Hygienie u. Inf. (Leipsic), xxxi, 1.

Ray Forms of Tubercle-Forming Organisms. LUBARSCH and SCHULTZE.—Research in respect to the "modified tubercle fungi," streptothrix, etc., has demonstrated that the actinomyces forms which until recently have been considered peculiar to and characteristic of a certain distinct species of disease germs, in reality belong to a long list of fungi of the streptothrix group. The ray and club shapes are not the expression of degeneracy but are rather deformed specimens, due to arrested development. This group of micro-organisms should not be classed with the schizomycetes nor the hyphomycetes, but should be considered independent transitional forms between these two forms. The principal cause of the formation of radiating foci is the reaction of the living tissue, the barrier formed around the invading bacilli by the leucocytes; the bacilli can only spread at the weakest points of the encircling barrier. Comparing this actinomycotic form of the tubercle bacillus with the actinomyces, he observes that the analogies are greater than the differences that separate them.

Bacteriologic Enzymes as the Cause of Acquired Immunity. EMMERICH and LOEW.—"The substance resembling an enzyme, secreted by bacilli, not only destroys its own bacilli in time but is also bactericidal to certain other species and neutralizes their toxins." Experiments with the enzyme derived from the bacillus pyocyaneus—"pyocyanose"—proved that not a single culture would develop after two hours, out of

nearly five millions of anthrax bacilli to which the pyocyanose had been added *in vitro*. Tests on animals were still more conclusive: pyocyanose given with over a fatal dose of anthrax cultures or five hours later, saved the animals and no bacilli could be found in the blood.

The Anthrax Bacillus Does Not Form Toxins. CONRADI.—"We have no evidence to prove the general assumption that the anthrax bacillus generates a toxin. On the contrary everything tends to indicate that the anthrax bacillus is a typical infectious micro-organism."

Clinica Medica Italiana (Geneva), March.

Permanganate of Potassium an Antidote for Nux Vomica. E. PARATORE.—Drinking a solution of fifty centigrams of potassium permanganate in one liter of water will transform the strychnin in the stomach into a harmless compound. Follow with lavage of the stomach with the same at 1/5000; chloroform if convulsions have appeared.

Importance of Local Reaction in Genesis of Immunity. G. CASTRONUOVO.—Extensive experimental tests have demonstrated that immunity to intoxication with abrin or ricinin can be secured in animals, and that it is more certain and more extensive in proportion as the primary local reaction is intense and lasting. The gradual disappearance of the local alterations is an index of the degree of immunity attained. Animals immunized against one are partially immunized against the other. If the local reaction is very energetic and lasting it can, per se, produce a considerable degree of immunity. It was also established that an intense local reaction produced by cantharidin confers a greater resistance to intoxication with bacterial toxins—Koch's tuberculin or diphtheria toxin—or analogous toxalbumins (abrin), but never sufficient to arrest the fatal course of tuberculosis.

Revista Medica de S. Paulo, June and July.

Liver and Spleen in Ankylostomiasis. P. MAGALHAES.—Hypertrophy of these organs in this disease is usually ascribed to malarial infection, but Magalhaes describes three observations in detail out of a large experience, in which the liver and spleen were much enlarged but no evidences of malarial infection could be discovered in the anamnesis nor blood, not even a trace of melanic pigment. The red corpuscles were diminished in number and varied from extremely large to extremely small, with some deformed specimens. In one case the leucocytes contained no trace of melanin granules. The leucocytes were diminished in number in all, and only one eosinophile was found in all the preparations.

Revista Medica de Bogota, March and April.

Hysteric Pseudotyphoid Fever. ALGANDONA AND CALDERON.—Suggestion proved the only means to control and cure the case described in this communication: a hysterical young woman who for six weeks presented the clinical picture of severe typhoid fever, utterly rebellious to baths and therapeutic measures, with several peculiar features, such as the exacerbations every seventh day, frequent abrupt rise and fall of the temperature and pulse, convulsions, discordance between and alternate occurrence of dyspnea and tympanism, fetal pulse and enterorrhagia, evidently aberrant menstruation. With suggestion, the temperature dropped two degrees and the pulse from 132 to 120 in five minutes, at one time. It also controlled and arrested the convulsions every time. The writers mention the difficulty encountered in the countersuggestion of the family.

Revista Medica (Mexico), August 1.

New Syndrome Consecutive to Wound of Spinal Cord. URRIOLA.—The symptoms produced by Mott by hemisection of the spinal cord in monkeys were typically reproduced in a case of stab-wound of the spine, that evidently severed the cord as in his experiments. The tip of the knife must also have injured the pyramidal tract beyond on the other—left—side, as lax paraplegia occurred at once, with the hemiparaplegia on the right side. During the two years since, the right side has regained its function, but the left only partially, and the left limb is much contracted. There were no vasomotor nor trophic disturbances at any time. Rectal and bladder functions were regular after three days of retention.

Societies.

COMING MEETINGS.

American Association of Military Surgeons of the United States, Kansas City, Mo., September 27-29.
Mississippi Valley Medical Association, Chicago, October 3-6.
Idaho State Medical Society, Lewiston, October 5-6.
Utah State Medical Society, Salt Lake City, October 6-7.
Wyoming State Medical Society, Laramie City, October 10.
American Academy of Railway Surgeons, Omaha, Neb., October 12-13.
Vermont State Medical Society, Burlington, October 12-13.
Medical Society of Virginia, Richmond, October 15.
Tri-State Medical Society of Alabama, Georgia and Tennessee, Chattanooga, October 24-26.
New York State Medical Association, New York City, October 24.
American Public Health Association, Minneapolis, Minn., October 31.

Idaho State Medical Society.—The annual meeting of the Idaho State Medical Society will be held at Lewiston, October 5 and 6, postponement from September 5 and 6 having been made to accommodate the State Board of Medical Examiners.

Douglas County Medical Society.—This Wisconsin society elected officers at its recent meeting, as follows: President, J. A. Rene; Vice-President, Dr. Saunders; Secretary, H. J. O'Brien; Treasurer, H. J. Orchard; Censors, Drs. Sheehan, Ground and McGill.

Kankakee Valley District Medical Society.—Twenty-two physicians met at North Judson, Ind., September 12 and completed the organization of this Society (see JOURNAL, August 26, p. 544) by the adoption of a constitution and by-laws and the election of the following officers: President, I. B. Washburn, Renssalaer; Vice-Presidents, W. A. Noland, North Judson, and R. B. Short, Union Mills; Secretary, N. W. Cody, Logansport; Assistant Secretary, H. B. Hill, Logansport; Treasurer, Wm. Kelsey, Monterey. After the organization was completed, Dr. Geo. W. Thompson read a paper on "Anesthesia," which was discussed by Drs. Short, Kelsey, Davis, W. H. Thompson, Thomas and others. The next meeting will be held in North Judson, Dec. 5, 1899.

Mississippi Valley Medical Association.—The next meeting of this Association will be held in Chicago, October 3 to 5. The general sessions will be held in Handel Hall, 40 Randolph Street; the Section meetings in the lodge rooms on the eighteenth floor of the Masonic Temple, and the exhibits in Commandery Hall, same floor. The following is the program:

GENERAL SESSIONS.

Address of the President. Dr. Duncan Eve, Nashville, Tenn.
Address in Medicine—"Typhoid Fever." Dr. J. A. Witherspoon, Nashville, Tenn.
Address in Surgery. Dr. Lewis McMurtry, Louisville, Ky.

MEDICAL SECTION.

1. Enzymes and Immunity. Chas. T. McClintock, Detroit, Mich.
2. Recent Physiochemic Researches as to the Physiologic Action of Lecithin and Other Organic Phosphorus Compounds. L. H. Warner, Brooklyn, N. Y.
3. Communal Hygiene. Ernest B. Sangree, Nashville, Tenn.
4. Some Phases of Malaria—Quinin in. Wm. Britt Burns, Deckerville, Ark.
5. The Treatment of Cystitis. M. F. Lee, Columbus, Ohio.
6. Diabetes and Its Constitutional Treatment. Elmore S. Pettyjohn, Alma, Mich.
7. The Treatment of Pulmonary Tuberculosis by Inhalation of Antiseptic Nebulæ. Homer M. Thomas, Chicago, Ill.
8. The Management of Cases of Pulmonary Phthisis at Health Resorts. Charles F. McGahan, Aiken, S. C.
9. The Treatment of Acute Lobar Pneumonia. Ramon F. Garcin, Richmond, Va.
10. The Art of Diagnosis. E. L. Larkins, Terre Haute, Ind.
11. The Successful Treatment of a Case of Graves' Disease as an Autointoxication. Charles L. Minor, Asheville, N. C.
12. Do We Need to Think? Wm. O'Neall Mendenhall, Richmond, Ind.
13. The Evils; Their Causes, and the Remedy That Will Edify Medicine in the United States. A. M. Osness, Dayton, Ohio.
14. Two Cases of Typhoid Fever with Unusual Complications in Very Young Children. E. B. Montgomery, Quincy, Ill.
15. Further Observations on the Treatment of the Abdominal Viscera Through the Colon. Fenton B. Turck, Chicago, Ill.
16. Report of a Case of Complete Hernia of the Pregnant Uterus. W. V. Anderson, Toledo, Ohio.

17. Leptomeningitis. Frank Parsons Norbury, Jacksonville, Ill.
18. Pathogenesis of Functional Nerve Diseases and Its Prophylactic Indications. John Punton, Kansas City, Mo.

SURGICAL SECTION.

1. Vesico-Rectal Anastomosis. J. Frank, Chicago, Ill.
2. Intolerant Ulceration of the Rectum, with Report of Five Cases. Sterling B. Taylor, Columbus, Ohio.
3. Modern Surgical Treatment of Hemorrhoids. Gustavus M. Blech, Chicago, Ill.
4. Hemorrhage from the Rectum and Its Varied Importance As a Symptom. Leon Straus, St. Louis, Mo.
5. Treatment of Certain Ocular Diseases by Excision of the Cervical Sympathetic Ganglia. James Moores Ball, St. Louis, Mo.
6. Urethral Endoscopy. W. R. Blue, Louisville, Ky.
7. Inflammation of the Verumontanum. J. Rilus Eastman, Indianapolis, Ind.
8. The Technic of Abdominal Incision, Peritoneal and Extra-Peritoneal. S. E. Milliken, Dallas, Tex.
9. Mammoth Ovarian Cysts. Reports of a Tumor Weighing 245 Pounds. Jas. B. Bullitt, Louisville Ky.
10. Some Causes of Death After Abdominal Section. Louis Frank, Louisville, Ky.
11. The Value of Prostatic Examination. J. Leland Boogher, St. Louis, Mo.
12. Intestinal Obstruction from Gall-Stones. J. Wesley Bovée, Washington, D. C.
13. Obstructive Growths of the Pylorus, with Report of a Successful Case of Pylorectomy. J. E. Allaben, Rockford, Ill.
14. What Becomes of the Medicinally Treated Cases of Appendicitis? Louis Schooler, Des Moines, Iowa.
15. Appendicitis from a Medical Standpoint. I. N. Love, St. Louis, Mo.
16. A Plea for Early Operation in Appendicitis. A. M. Hayden, Evansville, Ind.
17. Surgical Features of Appendicitis. Hal. C. Wyman, Detroit, Mich.
18. A Study of Twenty-seven Cases of Appendicitis. Frank T. Merriwether, Asheville, N. C.
19. Certain Special Features in Hernia of the Female. T. H. Manley, New York.
20. Surgery of the Turbinated Bones. J. A. Stucky, Lexington, Ky.
21. Nasal Stenosis Due to Defective Septa and Its Treatment, With or Without Thickening of the Convex Side. John J. Kyle, Indianapolis, Ind.
22. Mastoid Operation, With Report of Cases. Geo. F. Keiper, Lafayette, Ind.
23. Beta-Eucain As an Anesthetic in Eye Surgery. W. H. Poole, Detroit, Mich.
24. The Surgical Treatment of Chronic Frontal Sinusitis. Richmond McKinney, Memphis, Tenn.
25. Observations on Surgery of the Brain, Based on Clinical and Experimental Evidence. Geo. W. Crile, Cleveland, Ohio.
26. Removal of Cervical Sympathetic for Epilepsy, Exophthalmic Goiter and Glaucoma. Emory Lanphear, St. Louis, Mo.
27. An Arm Saved After Being Run Over by a Railway Locomotive and Crushed. S. L. Kilmer, South Bend, Ind.
28. Suture Materials in Surgery. Jos. Price, Philadelphia, Pa.
29. The General Treatment of Patients Before, During and After Surgical Operations. Fenton B. Turck, Chicago, Ill.
30. The Modern Small-Bore Projectile. Aug. Schachner, Louisville, Ky.
31. The Effects of the Automatic Mauser Pistol. J. D. Griffith, Kansas City, Mo.
32. Surgical Tolerance and Results. F. F. Bryan, Georgetown, Ky.
33. The Treatment of Gonorrhea in the Female. A. Ravogli, Cincinnati, O.

Cincinnati Academy of Medicine.

Sept. 2, 1899.

LICHEN RUBER PLANUS.

DR. MEYER HEIDINGSFELD presented a case of this disease with a universal distribution, of only seven weeks' duration. The eruption began on the flexor surface of the forearms, and extending over the arms, trunk and lower extremities. The papules were small, polygonal and waxy, aggregated here and there into plaques, purplish red in color, sharply defined and accompanied with pruritus. Papules were also present on the mucous membrane of lips, cheeks and palate. Two weeks of arsenic treatment had already induced reparative changes, and many of the large plaques showed central atrophy and a sepia-brown discoloration. The sister of this patient was also presented and showed a lichen ruber eruption of three years' duration, on the lower extremities, and of the verrucosus type.

SPLENOMYELOGENOUS LEUKEMIA.

DR. MARK BROWN presented a patient afflicted with this disease. The patient was a man 40 years of age, and, as far as he was able to state, his trouble had begun suddenly about fifteen months previously with sharp lancinating pain in the splenic region. This pain had resisted treatment for nine months. He had noticed no enlargement of the abdomen until New Year's day, 1898, but the tumor mass had steadily increased in size since that time. He absolutely denied venereal disease and had never had an attack of malaria. He has lost about forty pounds in weight since the onset of his disease, but has regained a little, since the institution of treatment about a month ago. On examination, the patient did not appear to be very anemic, but he was considerably emaciated, this condition contrasting greatly with the protruding abdomen. The heart revealed a basic hemic murmur, which became lost toward the apex. The apex-beat was pushed slightly upward. The liver was enlarged to between two and three inches below the costal border. The most important point was the enlargement of the spleen, which extended as far downward as the anterior superior spine of the ilium and laterally several inches beyond the umbilicus. The splenic notch could be readily detected. The tumor was firm and hard, painless on palpation, and without nodules on its surface. There was some enlargement of the submaxillary and inguinal glands, but no others were involved. There had not been swelling of the feet at any time. The only signs of anemia that had been present were a general weakness and shortness of breath on slight exertion. Ophthalmoscopic examination was negative aside from pallor of the dises. The red and white corpuscles were counted in the same pipette, Toisson's solution—1 to 200—being the diluent. dilution reds were 3,300,000; whites, 400,000; the hemoglobin was not estimated, as the test is not very reliable, the presence of the large number of leucocytes altering the color to such an extent that the resulting color becomes untrustworthy for comparison. Differential count; small lymphocytes 10 per cent.; large lymphocytes 6 per cent.; polymorphonuclear leucocytes 35 per cent.; eosinophiles 6 per cent.; and myelocytes 43 per cent. The myelocytes at 43 per cent. would count up about 175,000 corpuscles per cubic mm.

It has been claimed that the myelocytes were not distinctive of this disease as was once thought. This was admitted, but the claim was made that the greatest number of myelocytes found in any other disease was far less than the least number found in any case of splenomyelogenous leukemia. In addition the blood showed marked irregularity, both in the size and shape of the red corpuscles, numerous nucleated reds, both normoblasts and megaloblasts, and a few "mast" cells. It was difficult in many instances to distinguish a large lymphocyte from a myelocyte, and the personal equation had often to be relied on. The speaker thought that, on account of the similarity of the two leucocytes, the myelocyte was derived from the large lymphocyte in this disease at least. A stained specimen of blood was shown under the microscope and the field chosen demonstrated large and small lymphocytes, neutrophiles, eosinophiles, nucleated red corpuscles, and the great irregularity of the reds. The treatment consisted entirely of arsenic, administered as Fowler's solution, commencing with three drops three times a day. He has been taking this medicine, gradually increased, for about a month, until now he is taking nine drops three times a day, without any toxic manifestations. Patient stated that he has gained several pounds in weight during that time and that he thinks the swelling in his abdomen has somewhat diminished. In response to a question the speaker stated that excision of a leukemic spleen has been performed twenty-four times with but one recovery; out of 105 splenectomies there had been 48 deaths; 16 of these latter cases were of floating spleen, of which 15 recovered.

INTOXICATION.

DR. ORPHEUS EVERTS presented this, the paper of the evening. It dealt entirely with alcohol, and its defense in small quantities as a food. The writer's enormous experience enabled him to deal authoritatively with the question as to what part this drug plays in the etiology of nervous diseases, and he decided

that less than 10 per cent. could be assigned to this cause. He cited other statistics to this effect. The paper was discussed by Drs. Langdon, Taylor Mitchell and the essayist.

September 11, 1899.

SPECIMEN OF APPENDIX.

DR. EDWIN RICKETTS presented a specimen of an appendix taken from a boy, aged 17, who had had four attacks of appendicitis within the past year. On opening the abdomen he had twice punctured the superficial epigastric vein. The operation was somewhat difficult on account of the numerous and strong adhesions that existed. He was also compelled to remove a large piece of omentum to get at the appendix. The latter was found in about its normal position, but subperitoneal. The appendix was found to be doubled on itself.

DR. C. A. L. REED was interested in the statement that the appendix was subperitoneal. He himself had had a number of cases in which the membrane had seemed to be peritoneum, but was afterward found to be adventitous membrane.

DYSPNEA FROM GLANDS IN LARYNX.

DR. S. E. ALLEN reported the case of a boy 4 years of age, who had been brought to the Cincinnati Hospital the latter part of March. For four months previously the child, whenever handled or irritated, had suddenly developed severe attacks of dyspnea. Examination of the larynx was negative. An esophageal bougie passed readily into the stomach. A tracheotomy was done, but nothing found. The wound healed readily and the child was sent home in practically the same condition as when it entered. He died suddenly about one month later. Post-mortem examination showed a large mass of glands about the trachea, one of which had greatly softened and had ulcerated into the trachea.

MASTOID DISEASE.

The second case reported by Dr. Allen was one of mastoid disease. The patient, an adult male, gave a history of a discharge from the ear since infancy. Eight months ago facial paralysis developed. There were no mental symptoms. On opening the mastoid he had found this bone necrotic, the entire top of the tympanic cavity and of the antrum wanting, so that a probe could be passed upward in the cerebral cavity for a considerable distance. Anteriorly the necrosis continued as far as the sheath of the carotid, which was opened. Bleeding was readily controlled by a small piece of gauze. The man died four days after the operation.

GUMMA.

DR. ED. SHIELDS presented a girl about 11 years of age, with a small tumor formation at the left sternoclavicular junction. The patient had just come under his observation that day. Four years before he had treated the mother for serpiginous syphilide. He thought that the tumor was a gumma. At any rate, he proposed to treat the child on that line and will report the result to the Academy at some future meeting. He intends giving 1 gr. of blue ointment in capsules three times daily.

DR. ALBERT FREIBERG some years ago encountered a similar condition, but on operating found a tubercular caries which had necessitated removing a considerable portion of the clavicle.

AMPUTATIONS IN THE VERY AGED.

DR. J. C. OLIVER read the paper of the evening. Several cases were reported. The first, aged 80, had met with an injury to her left shoulder, supposed to be a dislocation. Six weeks later spontaneous fracture of the upper third of the humerus occurred, and on examination a tumor was found which was diagnosed as an osteosarcoma. Chloroform was used and the patient to all intents and purposes withstood its effects as well as a much younger person would have done. Amputation of the arm and of a considerable portion of the shoulder was made, with good recovery.

The second patient was aged 88, and was afflicted with gangrene of the great toe of the right foot. Gradually the gangrene spread to the other toes of the foot and was soon followed by a line of demarcation. Amputation at the metatarsophalangeal joint was made under 2 per cent. cocain anesthesia, and the stump closed perfectly after seven months. The essayist was inclined to the view that "a man is as old as his arteries," and believed these patients to be much younger physiologically than was determined by their years of life.

Cleveland Medical Society.

September 8, 1899.

COMBINED SARCOMA AND EPITHELIOMA.

DR. O. T. THOMAS exhibited a specimen which had been diagnosed before operation as epithelioma of the cervix with fibroid uterus. Microscopic examination of the cervix, after hysterotomy, showed combined sarcoma and epithelioma, a very rare condition. The body of the organ contained an adenocarcinoma in the endometrium, and within the walls an almost pure myoma which showed beginning sarcomatous degeneration. He exhibited one other specimen which had before operation been diagnosed from its softness and rapid growth as possible sarcoma, but which proved to be almost pure myoma.

DR. W. H. HUMISTON gave the history of the case from which the last-mentioned tumor was removed. There had been metrorrhagia for the previous nine months, together with symptoms of a tumor. Abdominal hysterotomy was performed, practically bloodlessly, by means of clamping the ovarian and uterine vessels. There was no shock and recovery was prompt. He thought these tumors should be removed as soon as they attained perceptible size, because of the risk of malignant degeneration.

DISTENDED STOMACH.

DR. C. F. HOOVER reported a case of a man, aged 19 years, who suffered from pain in the cecal region and vomiting. Diagnosis of appendicitis was made, but after four or five days in bed the tenderness diminished and the fever disappeared. However, severe thirst persisted, the tongue was very dry and he vomited large quantities of thin green fluid. There was abdominal distension, more marked on the left side, with considerable prominence of the hypogastrium. The prominence on the left side was dull on percussion, and by pressure a very distinct succussion sound could be elicited. A day later the symptoms became very much worse and death occurred. At the necropsy the tumor was found to be simply a distended stomach which practically filled the whole abdominal cavity. The appendix had sloughed off and lay up behind the cecum. There was no free pus in the peritoneum, but some along the ascending colon. No anatomic basis for the dilation of the stomach was found. A few cases of acute dilation of the stomach without apparent cause have been reported.

DR. R. J. WENNER remarked that Dr. Hoover's case furnished a strong argument for operation in appendicitis within twenty-four hours after the diagnosis was made. He reported a case of dilation of the stomach in a young man who had been shot through the dorsal region of the spine, and two other cases which followed directly on an attack of typhoid and in which stenosis of the pylorus existed.

DR. H. L. SPENCE quoted a recent report of a case of acute dilation of the stomach without apparent cause, which was followed in a few days, in spite of all treatment, by death in collapse. No mechanical cause could be found.

DR. C. F. HOOVER remarked that stomachs are generally contracted in typhoid, and that he had never seen dilation mentioned as a sequel of that disease. He also noted a case in which the patient died of collapse a short time after the passage of a stomach-tube, and said that it was perfectly clear that a stomach-tube should never be passed without some clear indication, as the sudden inhibition of the vagus may cause death.

RUPTURED ECTOPIC GESTATION.

DR. CHARLES TANNER of Willoughby reported a typical case of ruptured ectopic gestation with sudden death.

DR. HUMISTON gave it as his opinion that it was never too late to operate in such cases, and reported a grave case in which a successful outcome was possible by immediately finding and clamping the ruptured tube just as soon as incision was completed.

HIP DISLOCATIONS.

DR. C. A. HAMANN presented a case of a boy, 8 years old, who had fallen from a wagon, striking on his hip. He was able to walk after the accident, but in a day or two went to bed because of severe pain. When seen at the end of two weeks the leg was held in a flexed position, with the arch of the lumbar spine that is seen with coxitis. There was considerable fever and emaciation. The leg was extended with weights, and allowed to remain in this position for five or six days. There was no

improvement and the temperature still rose in the evenings. An abscess then formed in Scarpa's triangle. The pus was not that of a cold abscess. The case was found to be one of acute osteomyelitis of the inferior spine of the ilium and of the pubis. There was no evidence of hip-joint disease. After curettement the abscess rapidly closed. Staphylococci were found in the pus, but no tubercle bacilli.

DR. W. E. WIRT remarked that hip-joint disease could be eliminated from the diagnosis of this case because of the complete flexion of the limb. Even if the joint had been affected the opening of the capsule would not have been justifiable, because of the danger of fresh infection of the joint.

DR. C. A. HAMANN also showed a case of dislocation upward of the outer end of the clavicle, caused by a fall from a freight train, the man striking on his head and shoulder. He noted that, while this dislocation is easily reduced, it is difficult to retain in position, and considerable deformity usually remains. The best treatment is to appply a compress and then strips of adhesive plaster firmly bound over the chest anteriorly and posteriorly, covered by a posterior figure-of-eight bandage.

DR. C. J. ALDRICH had had poor results in treating these dislocations. He noted that the chief feature in the deformity was contraction of the trapezius muscle and that placing the patient prone on his back relaxed this muscle entirely and aided in securing a good result.

DR. WIRT reported four instances illustrating the necessity of making a complete examination in every case. The first had been referred to him as one of infantile paralysis, but on examination proved to be congenital dislocation of the left hip. Another supposed case of spinal disease proved to be congenital dislocation of both hips. The third case of supposed Pott's disease was found to have the same condition. In these cases, where there exists an acetabulum and a head of the femur, a good result can be obtained, but in many cases these structures are absent and cure is practically impossible.

RENAL CALCULUS.

DR. L. B. TUCKERMAN reported a case of removal of a renal calculus in which determination of the organ affected had been made by the ureteral catheter.

DR. R. J. WENNER noted that the segregator would probably have performed the same service equally well without danger of infecting the sound kidney.

Detroit Medical and Library Association.

Sept 8, 1899.

SURGICAL TREATMENT OF INTERNAL HEMORRHOIDS.

DR. W. F. METCALF, in a paper on this subject, said in part: The surgical treatment of internal hemorrhoids is satisfactory, but to secure the best results all abnormal conditions of the genito-urinary organs and of the whole digestive tract must be corrected, and in many cases the habits of living must be changed; hemorrhoids are frequently an important etiologic factor in disease, and the methods advocated by many authors are unnecessarily painful. The objections to the method of ligature en masse are that sloughing is produced, that the subsequent pain is too great, that it is unnecessary. The following method in uncomplicated cases is preferable: Thorough physic two days before, and a gentle physic the day before operation should be given, also a high enema the night before and an ordinary one the morning of operation. The patient should be thoroughly anesthetized and placed in the dorsal position, when any genito-urinary work required may be done before the rectum is touched.

The author favors the Pratt speculum. After adjusting the speculum so that a pile tumor presents between the separated blades, the mucous membrane covering the dilated vein extremities is removed with a sharp-pointed scissors curved upon the flat. These vein extremities are then clipped out. If there be but a small amount of fibrous tissue, this is all that is necessary. If the tumor contains much fibrous tissue, it should be cut off smoothly from the surface of the muscle. If a vessel spurts, an artery forceps is placed on it. The other tumors are treated in the same manner. All foreeps are now removed, the sphincters gently but thoroughly dilated and the denuded surfaces examined for arterial bleeding. If any points are found they are again secured by fine-pointed artery forceps, and ligated with fine catgut. This ligation is seldom necessary as the artery freed from the fibrous tissue retracts, and its intima being wounded by the forceps, its lumen is closed. The tags of redundant skin about the anus are then clipped off. A plug of iodoform gauze or of wool covered with silk and dusted with iodoform or other antiseptic powder is inserted. This plug should be removed as soon as the patient is conscious of any pain. Its presence lessens capillary hemorrhage and its removal clears away any small clots which may have formed. Sterile gauze wrung out of water as hot as can be borne should be pressed against the anus until the patient is comfortable, when a larger compress should be secured firmly by a T-bandage. If the patient be a woman, morphin is seldom required after this operation. This method leaves strips of membrane longitudinal to the gut, attached to the skin margin and to the membrane above. From these strips new membrane will develop to cover the entire circumference in about a week. After the first day comfort and cleanliness are ensured by letting a stream of a saturated solution of boric acid play on the parts, the patient being placed on the side, on a rubber pad, and instructed to strain down slightly. Water need not be thrown within the sphincters. It is better not to pass anything into the rectum, until healing is well nigh complete, unless colic is troublesome, which may and should be relieved by passing a sterilized rectal tube. Stool is forced on the fifth day. When this is desired three ounces of carbolized sweet-oil is thrown into the rectum, a seidlitz powder given at the same time, and two hours later an enema of a saturated boracic solution. Any irritable tags found around the anal margin at this time should be clipped off after injecting cocain solution. Where the whole circumference of the rectum is diseased and prolapses, amputation of the redundant mucous membrane by the American modification of the Whitehead operation is advisable. The points necessary to be observed in the operation are: 1. Thorough dilatation of rectal sphincters. 2. Removal of all diseased tissue. 3. Line of incision at skin margin at such a point that mucous surface will not be exposed or skin drawn within the grasp of the external sphincter when healing is complete. 4. Cutting of longitudinal fibers of membrane to be brought down. 5. Freeing and pushing upward the circular fibers which form the internal sphincter. 6. Sutures of catgut which do not pierce the epidermal layer of skin, thus lessening tendency to spasm of underlying muscles. 7. Avoidance of crushing of edge of membrane to be attached to the skin. 8. Dilatation subsequent to complete healing. Observance of these points will insure a satisfactory result.

Methylene Blue As a Sedative in Insanity.

The history of the use of methylene blue in general therapeutics is similar in many respects to that of other aniline compounds. Early reports, backed by commercial interests, were indicative of its value as a general panacea for many of the ills of the flesh, but of recent years it has found an established though restricted field in a limited number of affections. Its value in malaria admits of little doubt and in migraine and other nervous affections evidence is slowly accumulating that will give it a recognized position among the hypnotics.

Recent studies by P. Bodoni of the University of Genoa (*Klinische Therapeutische Wochenschrift*, No. 21, 1899, p. 666) seem to show its wide applicability as a sedative in excited mental states. He reports some fourteeen cases in which the remedy was tried; these included such conditions as simple acute mania, mania with furor, periodic mania, chronic mania, and the mania of chronic alcoholism, periodic melancholia, paranoia with delirium, hysteroepilepsy, and puerperal mania. In all of these cases the remedy was administered by hypodermic injection into the gluteal muscles, in amount varying from one to one and one-half grains. Its sedative action became manifest within from three to six hours and usually persisted a day or, in some of the cases, even for three to four days. The quieting action was not attended by any narcotic effect and there were no unpleasant after-symptoms observed.

The cause for its action is not definitely understood. By analogy, bearing in mind the use of this substance in technical microscopy by reason of its affinity for nerve tissue (methods of Ehrlich, Nissl, etc.), it would appear that it has a specific action on these tissues during life. This, however, has been denied by some observers who are inclined to class the drug with the blood poisons, acetanilid, etc., and thus explain its pharmacologic action. The author believes that it should take its place with others of the hypnotics, such as chloral, amylenhydrate, trional, and even hyoscyamus.—*Medical News.*

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SATURDAY, SEPT. 23, 1899.

THE MANNER OF INFECTION IN BUBONIC PLAGUE.

The occurrence of endemics of the plague in various places and the possibility that it may reach our own shores—a contingency which may come to pass at any day—shows clearly enough that this disease has much more than only a historical significance even for us.

Since the recent appearance of plague in India and China, the opportunities presented for thorough and scientific study of the disease have been used to exceedingly good advantage. We know that bubonic plague is caused by a bacillus which is pathogenic for animals, and that some of these animals, especially the rat, play an essential rôle in the local spread of this terribly fatal disease. While it is the accepted opinion that the disease is carried long distances by man himself, either in the person of patients or in infected articles of various kinds, yet the manner of extension in the endemics thus started does not depend so much on direct contagion as on the intervention of certain of the lower animals.

According to the investigations of Hankin and of Simond[1] the rat certainly is the carrier of infection. The irregular extension in the cities and villages of India can not be explained as due to infection through the air and water. Cases will appear in houses both far and near from original centers of infection, and at the height of endemics the spread is very capricious. In certain parts of Africa the onset of an endemic is foretold by the natives from the death of large numbers of rats which then occurs, and when these animals begin to die the natives leave their huts. In Formosa the term "bubonic plague" literally means a disease of rats. The identity of the disease in rats and in man in such cases has been established bacteriologically. Simond has found that in two cases plague developed in men after endemics among rats on board ship. Simond also hopes that the recrudescences characteristic of plague epidemics depend on the appearance of new generations of rats.

The next question is: How does the disease spread from rat to rat and from rat to man? While an absolutely satisfactory explanation can not be given at the present time, there are a number of facts which speak in favor of the flea being the principal direct agent of infection. According to Simond, fleas abound on rats sick with plague; bacilli, like the bacillus of plague, have been found in the intestinal contents of such fleas; and the disease has been communicated experimentally to healthy rats through fleas from plague-stricken rats. The flea theory explains satisfactorily the partiality of plague for the inhabitants of the most unhygienic parts of cities, and also the manner in which infection may be carried in wearing apparel.

While this seems to be the usual mode of infection there are also other possibilities to be considered. It has been shown by suitable experiments that infection may occur through the digestive tract, although not readily. But the plague bacillus does not live long in water, and Childs[2] shows that the mesenteric glands are not enlarged in cases of plague in man. These facts argue against the digestive tract as the usual seat of infection. In the so-called plague pneumonia the infection is generally held to occur through inhalation, because of the principal localization of the bacillus in the lungs, but it has also been shown that the bacillus is readily destroyed on exposure to the air. Hence, it may be concluded that, in the vast majority of cases, infection with the plague bacillus takes place through the skin, the flea and possibly other insects being the most likely immediate carrier of the infection.

Viewed in the light of our present knowledge of the manner of infection it is quite apparent that certain districts of our cities, especially the larger, offer favorable conditions for the spread and maintenance of the plague should it ever be introduced. The preventive measures are to be directed against rats, parasites, and man. Simond recommends that ships should be fumigated so as to asphyxiate the rats, which should be treated with boiling water before removal and then other familiar methods of disinfection should be thoroughly employed.

[1] Annales de l'Institut Pasteur, 1898, xii.

INSUFFICIENCY OF THE LIVER.

The results of recent investigation would seem to indicate that the metabolic function of the liver is far more important than its secretory function—to make a literal rather than a scientific distinction. The pancreatic juice, in conjunction with the gastric and the intestinal juices, seems fully capable of satisfactorily

[2] British Med. Jour., 1898.

effecting the processes of digestion without the aid of the bile, but failure in the metabolic activity of the liver results at once in the development of symptoms of intoxication. These disturbances are, as a rule, unattended with appreciable anatomic alterations, and are thus beyond actual demonstrative proof. In addition to the secretion of bile, the liver stores up glycogen, takes an active part in the formation of urea, and removes or neutralizes poisons contained in the portal blood and largely derived from the gastro-intestinal tract.

In a suggestive communication on hepatic insufficiency, Pick[1] discusses four states that he considers dependent on this condition: catarrhal jaundice, cholelithiasis, the uric acid diathesis and diabetes.

With regard to catarrhal jaundice, it has been assumed that functionally deranged liver-cells may return to the blood biliary constituents that they had previously secreted, and it has been thought that such a state of affairs might be brought about by either abnormal irritation of the secretory nerves of the liver or the presence in the circulating blood of toxic substances derived from without or generated by intestinal or pathogenic bacteria.

The formation of biliary calculi, which consist principally of cholesterin and biliary coloring matter in combination with calcium carbonate, is attributed to secretory disturbances, as it has been experimentally found that such concretions can—on long exposure to the action of the bile—be dissolved in the gall-bladder of dogs after ligation of the cystic duct.

Many cases of the uric acid diathesis may be viewed as an expression of hepatic insufficiency, from failure of conversion by the liver-cells of ammonium carbaminate into urea, in consequence of the presence in the portal blood of toxic substances, derived from the intestinal tract. This explanation, also, may be applicable to many cases of neurasthenia attended with increased elimination of uric acid; and to the transitory or alimentary glycosuria and even mild diabetes occurring under like conditions, and attributable to failure on the part of the liver to retain its glycogen. Cases of diabetes in which the amount of sugar in the urine increases on a nitrogenous diet, with restriction of carbohydrates, may be looked on as dependent on hepatic insufficiency.

It is thought that hepatic insufficiency may be congenital or acquired, and that in the development of the latter variety intoxication from the intestinal tract plays a most important part. The ability of the liver to neutralize this intoxication is limited, and will vary with the character and the amount of the poisons generated. Insufficiency of the liver may be due also to organic disease. When due to intoxications from the intestinal tract and manifested by catarrhal jaundice, cholelithiasis, diabetes and the uric acid diathesis, alkalies yield most useful therapeutic results, and among these sodium salicylate has especially proved of service. Mineral waters may be taken with advantage, and further intoxication is to be prevented by making the diet a mixed one and restricting proteids in favor of carbohydrates, and increasing the motor activity of the intestine by mechanical and chemical means.

[1] Wiener Klin. Woch., April 8, p. 697.

EOSINOPHILOUS BRONCHITIS.

The establishment of an eosinophilous bronchitis, by Hoffmann of Leipzig, rests on the occurrence of a bronchial catarrh in which the sputum is exceptionally rich in eosinophilous cells. The condition is now described somewhat more fully as a more or less distinct disease, by Teichmüller[1]. Nothing is as yet known concerning its pathologic anatomy, because the disease is not fatal, and opportunity to study the morbid changes can only be secured through some accident. The real cause and the exact nature of this disease, as well as that of asthma, are unknown. The disease is a form of chronic bronchitis which, when undisturbed by treatment, is characterized by intermissions of good health; the patients do not suffer very acutely, and consequently they do not as a rule seek the aid of a physician until some time after the beginning of the symptoms. The complaints then made resemble wholly some of those characteristic mild degrees of asthma and of emphysema, or of any other form of bronchitis. There may be a more or less well-marked dyspnea. Whistling rhonchi associated with prolonged expiration are said to be frequently present over both lungs. Cough is rarely absent. The expectorate is transparent, slimy, rather thin and it does not resemble the thick, viscid asthmatic mucus. The especially characteristic peculiarity of the sputum is the presence of numerous eosinophilous cells, not only in but also between the little masses of mucus which have been spread out on the slide. In suitably stained preparations (0.5 per cent. alcoholic solution of eosin and saturated solution of methylene blue) these cells may be so numerous as to form red foci which are visible under very slight magnification; the only other disease in which they occur in such numbers is asthma. Typical Curschmann's spirals are not present, but rudimentary spirals without the central thread are occasionally observed. Fever is rarely present. The patients commonly complain of general weakness.

The diagnosis is easy for the physician who is in the habit of examining the sputum of all patients who present symptoms pointing to the respiratory tract. He who has no time for examining the sputum can not with certainty diagnose eosinophilous bronchitis; such cases, as well as cases of beginning tuberculosis will often pass through his hands under an erroneous diagnosis. The differential diagnosis between eosinophilous bronchitis and asthma is not difficult provided the conception of asthma be limited to attacks of dyspnea with peculiar expectoration and emphysematous distension of the lungs.

The prognosis is good in all cases that live under reasonably good hygienic conditions. Gymnastic and

[1] Deutsche Arch. f. Klin. Med., 1899, 63, 414.

hydrotherapeutic directions suffice for treatment. Short, cold douches or warm baths followed by cold sheets must be used. The only drug to be used is iodid of potassium in those cases in which there is reason to believe that the bronchitis in some way rests on a luetic basis. Teichmüller emphasizes the necessity of measures to improve the general physical condition of the patients.

UNIFORM MEDICAL LEGISLATION.

Last June the Wayne County Medical Society—Detroit, Mich.—appointed a committee for the purpose of initiating a movement looking to the creation of a national board of health or, in some way, to secure uniform legislation in every state. The committee made its report on September 14, and in its report says that it sent circulars to fifty-one states and territories, in which replies were asked to seven questions—the most important of these being as follows:

"Would you be inclined to favorably consider the plan of entering into a state of reciprocity with other states which have practically the same requirements for the license of practicing medicine as your state has?"

"Would you join in the efforts in working out a memorandum to be presented to the legislative bodies of the different states with the view of introducing a bill as to the subject-matter, and would your secretary co-operate with us?"

The committee received answers from thirty-six states and three territories. Thirty-four of the answers were favorable, showing almost unanimity. The unfavorable answers were accompanied by explanations which made it not at all impossible to overcome the difficulty. While the committee recognizes the existence of the National Confederation of State Medical and Examining Boards, it believes that the state medical societies of the country ought to act separately, at least at the beginning. As the committee was instructed to continue, we hope it may be able to accomplish its object so that all states shall have like medical laws, with reciprocity. There is certainly a need of a different system of licensure for the control of medical practice than the unequal one that now exists in the different states. It seems hardly just to compel a physician who desires to move from one part of his own country to another, to pass an examination when that move happens to carry him into another state. Few men, no matter how well qualified, are able to pass a fairly good examination in all the fundamental branches. A technical knowledge—that which can be expressed in words—of all such fundamental branches as anatomy, physiology, chemistry, etc., is held by but few men. Men in special lines of work are more decidedly liable to get rusty in other branches, and would make sorry work of passing an examination that would have been easy in their early professional life. The possibility of doing away with this anomaly in our system of regulating the practice of medicine is not hopeless. It must come, however, through concerted action on the part of the different states, national legislation on the subject being probably unattainable. To accomplish this reform a central body must be created, through which the different state bodies shall act, and this central body must be created by the states themselves. The first thing to be done, therefore, is to get each state to take action, and this, as we understand it, is what the Wayne County Medical Society is attempting to do. One thing must be recognized at the beginning, however, and that is that the united action of the states will only come by raising the standard in those states that have now too lax a law, and not by a retrograde movement on the part of any. It might be well to here call attention to a resolution adopted by the AMERICAN MEDICAL ASSOCIATION at its meeting in 1894, viz.: "That we request the state societies to unite in establishing a uniform standard of professional requirement for admission to the practice of medicine, and to aid, as far as possible, in advancing the scientific status of the same by the appointment of state examining boards independent of the teaching faculties of medical colleges."

BOVINE VS. HUMAN TUBERCULOSIS.

Dr. Edward Moore, a prominent veterinary surgeon of Albany, N. Y., published in the last two issues of the *N. Y. Medical Journal*, a rather long article on human and bovine tuberculosis. In this he takes a position directly in opposition to that of leading sanitarians of the day, in that he holds that bovine tuberculosis is not transmittable to men, and vice versa, and that the bacillus has become so modified by habitat as to become specifically distinct. In support of this view, besides his own experience and observation for many years, he quotes Dr. Theobald Smith, certainly no mean authority, who has expressed himself as recognizing, at least provisionally, a distinction between the respective germs of human and bovine tuberculosis. Dr. Moore denies that there has been any positive or satisfactory evidence of the transmission of bovine tuberculosis to man, or from man to cattle. Dr. Cooper Curtice, in 1897, examined some 240 cattle in the vicinity of the Saranac Lake Sanitarium, feeding in the pastures where the aggregated consumptives took their exercise, and found no tuberculosis. He also published letters from various persons of wide experience and observation, including the veterinarian of the Massachusetts Agricultural College and the director of the New Jersey Agricultural Experiment Station, who testify in accordance with his views. Dr. Moore's publication is likely to call attention to the need of more thorough study of this subject, and to the fact, if it is such, that satisfactory evidence of intraspecific transmission of tuberculosis between man and cattle is still lacking. It is surprising, indeed, if this is so, since physicians and public health authorities have been acting constantly and consistently as if the reverse were true.

HOW SHALL THE NEW REMEDY BE RECEIVED.

The new remedy, to be of value to the busy practitioner, must be accompanied by the report of careful

studies as to its mode of action and its therapeutic indications. Who shall furnish this? The pharmacologists alone after painstaking experiment may authoritatively report on the physiologic action of the new product. These are not numerous, and, excepting a few now finding a place in the schools, can hardly thrive beyond the confines of the laboratories of the great manufacturing pharmacists. As a rule the profession may safely rely for pharmacologic information on the reports of the experimenters employed by the large manufacturers. In the future, however, the laboratories of the schools will contribute largely to unbiased pharmacology. The physician with an extensive hospital service is best able to effectively determine the therapeutic value of the new drug. It is the rule to look askance on the laudatory clinical report from the unknown practitioner of the small village. This is not because the small place has a monopoly on cupidity, for it is well know that the venal of all ranks tend strongly to congregate in the cities, but unfortunately because experience teaches that the majority of these testimonials come from obscurity. At times this is due to the non-existence of the accredited writer, again to the overwhelming need of some who are not overscrupulous, and again to the vanity of the would-be shining light. Obscurity nearly always indicates lack of adequate opportunity to render judgment of value, even when the requisite ability to draw valid conclusions from well-established observations is not lacking. Hence, the only reports of the properties of new remedies to which the physician should give heed are those emanating from pharmacologists of established reputation and from clinicians of known wide opportunity and unquestioned probity. By adhering to this rule the profession will compel the manufacturer to produce such evidence and the common and outworn testimonial will be condemned to well-merited oblivion.

THE PRESENCE OF DIPHTHERIA BACILLI IN HEALTHY PERSONS.

The statement that a micro-organism can be regarded as the cause of a definite disease only when it is found exclusively in the disease in question, which must then be present, has long ago been modified. We know that the presence of the cause of a disease does not necessarily mean development of the disease, because there are conditions which prevent this. A bacterium may therefore be regarded as the cause of a certain disease when it is constantly found in connection with the disease, and as a rule only in this disease. It is assumed that the occurrence of the bacterium without the development of the corresponding disease is relatively rare. This question has rapidly come to the fore in connection with diphtheria. We know that the bacillus of diphtheria is found in the bodies of patients free from diphtheria, as well as in absolutely healthy persons. Recently Kober[1] reviewed the literature bearing on the distribution of the diphtheria bacillus on the mucous membrane of the mouth and pharynx of healthy persons. The facts reported in the literature show that the diphtheria bacillus has been found in persons who have not come in contact with diphtheria patients—in 7 per cent. in the investigated cases. Kober studied 600 persons and found the diphtheria bacillus present in 2.5 per cent. In 15 of these, close examination revealed that the persons had come in more or less intimate contact with diphtheria patients, so that the occurrence of diphtheria bacilli in the oral cavity of individuals who have not come into contact with diphtheria patients is reduced to 0.83 per cent. All the cultures from the first set of cases were pathogenic to animals, none of the last set were. The observations recorded in the literature would indicate that diphtheria bacilli occur in the oral cavity of 18.8 per cent. of persons associated with diphtheria patients. Kober carefully investigated 123 persons who were in more or less close relation to the disease, and found the bacillus only ten times, that is to say, in 8 per cent.

[1] Ztft. f. Hygiene und Infectionkrankheiten, 1899, xxxi.

PUBLIC ACCUSATIONS AGAINST HOSPITALS.

A medical officer in New York City has recently made a public accusation against the surgical staff of the local hospitals, that operations are needlessly and carelessly performed in these institutions. The charge has naturally been resented, not only by the accused surgeons but by at least one of the leading lay papers, which editorially takes up the gauntlet in favor of the hospital staffs. The accusation appears to have been a general one, though, so far as stated, it is based on the coroner's physicians' interpretation of a case where he claims the diagnosis was wrong and the operation unnecessary, and another where he charges neglect in a case of fractured skull. It would seem, at least, an inconsiderate act for a physician holding an official position to offer general criticism involving, as it were, the professional character of men whose standing in the profession is certainly higher than his own, without ample proof to support his assertions. There does not appear to be any very adequate grounds so far as the facts have been published for even suggesting any mistake, much less any needless recklessness on the part of the operating surgeon. If the criticism is aimed at the regular visiting staff of the great hospitals of a medical center like New York City it has of itself little weight, for it is the condemnation by a comparatively obscure medical man of the leaders of the profession. Much more than his mere assertion will be needed to give it credence. If it is aimed at the house staffs, the same is true, for they are under the direct supervision of these leaders, and a derogation of the one implies that of the other also. The apparently wholesale character of the accusation also makes it really undeserving of serious consideration, except in so far as it is likely to have the effect of impairing public confidence in the public and private charitable institutions. Where these are not demoralized by the political control, one may naturally question the unfavorable opinions of a political appointee in regard to them. It is, as Dr. Shrady says in a published interview, not only unprofessional but also against public policy that the confidence in our hospitals and in the ability of the hospital attendants should

be inconsiderately questioned. In no other country is it so common to exaggerate faults and "wash dirty linen" in public as it is here, and there are some, we regret to say, that appear to consider it meritorious to besmirch and defile, in order, it would seem, only to exploit their own self-righteousness. Reckless accusations, generally applied, can sometimes be thus best interpreted.

QUARANTINE OF THE TUBERCULOUS.

The California State Board of Health has, it is stated, unanimously passed a resolution to the effect that it consider the propriety of quarantining against the entry of human beings or domestic animals suffering with tuberculosis. It is to be hoped that this consideration will be thorough and deliberate, and that no hasty action will be taken. At the present time many of us can hardly be said to be in a judicial state of mind on the subject of tuberculosis. The pendulum has swung nearly or quite to the extreme in one direction, as shown by the statements made in the lay and medical publications of the day, in regard to the excessive contagiousness of the disease and the ratio of deaths from this cause in the general mortality. We have repeatedly seen it stated that consumption is the most contagious of diseases, that it is responsible for one-third of all deaths from all causes, that it did not exist in various regions until carried there by health-seekers, that trained nurses would rather care for smallpox patients than for consumptives, with other still more extreme utterances given out from time to time. The result is a sort of medical panic which is being transmitted to the public, and the consequences of which may be serious injustice and hardship to an already afflicted class. So far as we have been able to ascertain, consumption is not in the proper sense of the word *highly* contagious. We find that in most civilized countries its mortality does not exceed from 9 to 12 per cent. of the total, and, considering all things, more nearly the smaller than the larger figures; that it has existed more or less in nearly all regions; that its increasing death-rate in health resorts is largely due to the immigration of diseased individuals, and would be mostly confined to them if ordinary reasonable precautions were observed, and we have never yet met a nurse who preferred the contagion of smallpox to that of tuberculosis, even though protected by vaccination. Consumption does not spread from well conducted sanatoria, as is shown by experience. Why should the residents in a climate like that of California, where those infected with tuberculosis go to recover, suffer unduly from the disorder unless they neglect the needed precautions? And if this be so, why should they deny the benefit of it to those to whom it is supposed to be physical salvation? The resolution is not in the line of medical progress or philanthropy, nor do we believe it to be in the line of true sanitation. To make an effective quarantine against tuberculosis, not only the openly manifest cases of tuberculosis must be excluded, but the incipient and latent ones also, and this would be a task beyond the abilities of any state authorities. It would be more effective as well as humane to regulate unsanitary habits and conditions, prevent indiscriminate expectorations in public conveyances and rooms, use proper methods of disinfection, where needed, and instruct the public as to the proper care of themselves, than to create a panic by proposing wholesale quarantine and exaggerating the danger and contagiousness of the disease. We have learned that it is contagious or infectious, or both, to a certain degree, but we have also learned that its contagion or infection is ineffective in nine cases out of ten, or we should all be its victims. Perhaps we should better say it is ineffective in 999 cases out of 1000, for we must all be almost daily exposed to it in our large centers of population. Under such circumstances, while doing everything that is reasonable to check the scourge, why should we excite exaggerated fears and call for inconsiderate and panicky legislation. If California is really becoming dangerously infected with tuberculosis, its authorities can publish the fact and save the expense of quarantine: the publication would be just as effective as the other. Heretofore it has only disseminated far and wide the accounts of its glorious climate for pulmonary invalids, and the course now suggested will, if adopted, seem to the world a surprising change of front.

Medical News.

THE HEALTH Board of Detroit, Mich., is endeavoring to suppress faith healers in that city.

THE SPANISH *Ilustracion* suggests supplementing the military cordon around Oporto with a cordon of cats.

PROFESSORS Frosch and Kossel of Berlin have been sent by the German Government to study the plague at Oporto.

THE EVANSTON (Ill.) hospital has established a training school for nurses in connection with the regular work of the institution.

DR. A. RAVOGLI, Italian Consul for Cincinnati, Ohio, has just returned from Europe. While abroad he was knighted by King Humbert.

IT IS reported that the managers of the Chester County (Pa.) Hospital have started a movement for the erection of a home for nurses, to cost $5000.

BY THE will of Philip Gruner, whose death recently occurred in Germany, a provisional bequest of $1000 has been left the German Hospital of Philadelphia.

THE NEW chapel of the St. Joseph's Hospital, Bloomington, Ill., was formally dedicated September 14. The cost of the building with its furnishings was $9,000.

THE AUTUMN maneuvers of the French army have been omitted this year on account of a serious epizootic of foot and mouth disease prevailing in the regions selected.

DR. JOHN C. WISE, fleet surgeon to the command under Admiral George Dewey, will be the guest of honor at the eighth annual convention of army surgeons, Kansas City, September 27-28.

DR. L. M. ALLEN, for the past six years connected with the Maryland University Lying-In-Hospital, has been appointed associate professor of obstetrics in the University of Maryland School of Science.

OWING to the resignation of Dr. Charles B. Penrose, as professor of gynecology in the University of Pennsylvania, last spring, this chair is still vacant. There are said to be sixteen applicants for the position.

A GERMAN daily states that Professor Quincke of Kiel sent in his resignation as chief of the medical clinic,

because the faculties and accommodations are so inadequate and his repeated protests have been persistently ignored.

THE FREDERICK DOUGLASS Memorial Hospital—colored—Philadelphia, has issued an appeal for subscriptions looking toward the purchase of a site and the erection of a larger and modern hospital building. The sum asked for is $75,000.

UNIFORM nomenclature of the causes of death was one of the subjects exhaustively discussed at the Biennial International Congress of Statistics, which opened at Christiania, September 4. The chief address on the subject was by Bertillon.

A DESPATCH states that Ambassador Choate has advised the State Department that Her Majesty's Secretary of State for War has accepted the invitation of the Military Surgeons of the United States, and has deputed Mr. McWaters, R.A.M. Corps, to attend.

A SINGULAR case of death, illustrative of the danger of keeping household pets in living rooms, is reported from Washington, D. C. A parrot of mischief-making proclivities removed the lava tip from a gas burner and as a result caused the asphyxiation of a young woman of 23 years.

THE MEXICAN Academy of Medicine has offered a prize of $500 for the best work on either exploratory laparotomy or tuberculosis, or both. Competing articles must be in Spanish, and be received by the secretary, L. T. Alcala, Cuadrante de Santa Catalina, 12, before October, 1900.

A SUITE of rooms has just been completed at the University of Pennsylvania Hospital, specially constructed and equipped with all the modern apparatus necessary for operations. The suite consists of an operating-room proper, a recovery-room, and one exclusively for the surgeon's use.

THE NEFF Home for Convalescents, situated at Price Hill, Cincinnati, Ohio, has just been opened. The accommodations are limited to twenty. It is purposed to carry out the principles of the Weir-Mitchell rest cure. Dr. Frank Hendley, late superintendent to the Cincinnati Hospital, will be in charge.

WE NOTE that *El Progreso Medico* of Havana, Cuba, speaks most enthusiastically of the great work accomplished by Dr. C. K. Furbusch of the American army, in reorganizing the hospitals of Havana and founding a training-school for nurses, in the short space of three months before he was transferred to Manila.

DR. DANIEL R. BROWER of Chicago addressed the Buffalo (N. Y.) Academy of Medicine, September 12, by invitation, on the "Medical Aspect of Crime." There were present, as guests of the Academy, a number of prominent lawyers and clergymen. The doctor urged the asexualizing of the habitual criminal.

PROF. SIMON FLEXNER, who recently severed his connection with the Johns Hopkins to assume the chair of pathology in the University of Pennsylvania, as noted in the JOURNAL at that time, and who for the past few months has been studying tropical diseases in the Philippines, has returned to Philadelphia to assume his duties at the opening session.

BY THE WILL of the late Judge Richard Prendergast, Chicago, a "rest-cure home" will be founded for the benefit of persons suffering from nervous disorders. The institution will occupy the former summer residence of the donor, consisting of 150 acres at Wheaton, Ill., and will be in charge of a community of Sisters of Charity. It will be known as St. Winifred's Rest, in honor of the wife of the testator.

TO ESCAPE the strict quarantine measures, the captain of the *Albertville*, arriving at Antwerp from the Congo, had a couple of negroes suffering from smallpox thrown overboard. A passenger reported the occurrence to the authorities, but the captain managed to escape to England. The Belgian Government has requested his arrest.

THE SIXTH annual meeting of the Detroit (Mich.) Physicians' Protective Association was held September 12, and reports submitted showing the organization in a very satisfactory condition. Officers were elected as follows: President, Guy L. Kiefer; vice-president, D. L. Walmsley; secretary, A. P. Biddle; treasurer, S. H. Knight.

THE EIGHTEENTH annual session of the College of Physicians and Surgeons, Chicago—Medical Department of the University of Illinois—opened September 19. Other medical institutions which have begun their winter's work are the Kansas City Medical College, and the University Medical College, Kansas City, Mo., and the Medico-Chirurgical College of Philadelphia.

DR. JOHN G. REED, Cincinnati, Ohio, has issued a letter to the Cincinnati and Hamilton County medical fraternity, calling on physicians to band together and demand representation in the legislature, declaring that there should be one doctor elected to the legislature for every lawyer sent there. Dr. Reed advocates a political-medical organization with the hope of securing to the profession and the people the wise legislation so long contended for by the leading physicians of the state.

A BOLD robbery took place at the St. Joseph's Hospital, Philadelphia, during the past week. Owing to great improvements now going on at that institution, and the large number of employees about a burglar gained entrance to the office during the noon hour, broke open the office desk, and appropriated $45. The man was seen entering the building and told one of the employees that should anyone inquire as to his whereabouts, he could be found on the roof, and so passed as an employee .

A PRELIMINARY meeting has been held and officers elected, the purpose of which is to form an association having for its object the erection of a hospital for orthodox Jews in Philadelphia. The initial meeting was composed for the most part of contributors to an orphan asylum now in existence in the lower section of the city, in which locality the proposed building will be erected. It is now proposed to hold a mass-meeting for the purpose of bringing the subject more properly before those who sanction the movement.

IN AN address before the recent German-speaking congress of anthropology, Virchow called attention to the dangers of substituting the "traditions of opinions" for the "traditions of facts," observing that they are especially misleading in anthropology and the sciences to which it is the handmaid. He ridiculed the way in which anthropology seems to have concentrated and restricted its attention to the skeleton, as if there were no nobler parts of the organism: "mutability of the type is far more important in respect to the brain and muscles than to the skeleton," adding that pathology is merely physiology under difficult circumstances.

DR. BRANDRETH SYMONDS, medical examiner of the Mutual Life Insurance Company of New York, suggests that a course of six lectures be given in medical

colleges on "Instruction In Life Assurance Medicine," as follows: 1. Some instruction in vital statistics and the fundamentals of life insurance. 2. The relation of the examiner to the company and the applicant. 3. The facts concerning each disease, which are of importance from a life insurance standpoint. 4. Habits, occupations and employment. 5. The family record and heredity. 6. The physical examination, particularly with reference to the distinction between essentials and non-essentials. 7. The relations of examiner to the agent. 8. Frauds and fraudulent practices.

A MOVEMENT has been started among Philadelphia women, the aim of which is to wage war on disease, and its prevention by practical rules of hygiene. A meeting has been held, organization effected and a charter applied for. The organization will be known as the "Woman's Sanitay League of Pennsylvania." Its purpose is the advancement of sanitary science, the promotion of public health and good government, and the forming of country and local auxiliaries to extend the beneficent work. It is stated that the action of the St. Louis Board of Health in requiring the disinfection of all such materials as second-hand books and clothing is the precedent with which the committee presents its plea to the Philadelphia authorities. The subject of schools and school children, expectoration, and the summer diseases of childhood will all come in for their share of consideration.

AS A RESULT of a series of experiments on dogs, turtles and frogs, Dr. Richard H. Cunningham of the Vanderbilt Clinic, New York City, has, it is said, come to the conclusion that death in the case of the electrocuted is not due to paralysis of the heart, but to fibrillary contraction of that organ, which results in collapse of the nervous system. In all cases of this character, it is claimed, death is preceded by a period of consciousness, during which the recipient of the shock feels, but without the sensation of pain. In seemingly sudden death from shock due to powerful currents, it is stated that the thorax in the case of the lower animals has been opened and the heart found still beating. From these experiments one would be led to the belief that persons coming in contact with charged electric wires might be resuscitated by appropriate remedies, "such as creating artificially a temporary circulation of a fluid capable of sustaining the heart and the nervous system until the heart has recovered sufficiently to maintain the circulation in the normal manner."

ACCORDING to the *Gazette Medicale de Paris*, Dr. Jorge, the director of the bacteriologic institute at Oporto, reported to the government early in July what he believed to be cases of the plague, and officially informed the authorities of the existence of the plague in Oporto, the 28th, but the epidemic was not announced by the government until August 15. Telegrams despatched by Spanish physicians resident in Oporto were not received by the addressees, and it is supposed they were detained by the authorities. The schools have been closed and all the navy medical officers who have had experience with the plague have been ordered to Oporto. The merchants and populace are furious against Dr. Jorge, and he has been obliged to be protected by a military escort when he appears on the street; several persons have been wounded in the manifestations against him. He has received more than fifty threatening letters. Dr. Heppenitz has been sent from Russia, by the Russian Plague Preventive Society, with 2000 vials of plague serum, and offers to establish a "serum factory." Despatches from St. Petersburg also announce that the plague has broken out in Samara, in southeastern Russia, and the town of Tsarytzine has been surrounded by a military cordon.

Correspondence.

The Third International Periodical Congress of Obstetrics and Gynecology.

(Delayed Correspondence.)

AMSTERDAM, Aug. 16, 1899.

This delightful metropolis of the land of the sea has been the scene of interesting events to those who, during last week, were attendants on the Third International Periodical Congress of Gynecology and Obstetrics—a stately title, and one which everybody of course immediately contracts into "the Gynecologic Congress," as it should be in this age of telegraphic brevity. But stately and solemn sounding as was its title many came from many lands. It was interesting here, as in all similar international events, to see Kieff and Chicago, Tokio and Toulouse, Manchester and Madrid, Helsmyfoss and Rome, Stockholm and Nice, Paris and New York, Bucharest and Brussels, to say nothing of Barcelona and Cincinnati exchanging greetings with each other, and thus widening that amity which places the great profession of medicine above personal and political considerations. It was pleasant to feel that the civilized world as represented by the most advanced nations exemplified this lofty conception—and yet Germany was not there. Germany, the next-door-neighbor, sat on the fence and made faces while the splendid procession was marching to the tune of progress. Amsterdam and Griefswald did not exchange greetings. It seems that some time some Germans had been selected to fill some vacancies in some universities in Holland. Then some more Germans became candidates. Then some Dutchman had the temerity to intimate something about the propriety of Dutch professors for Dutch universities. This seemed to be very offensive to German professors, who could not understand why, if German interests so demanded, every professor of every other nationality should not quietly and smilingly remove himself from the face of the earth. Well, it so happened that the Dutchman who said something about Dutch professors for Dutch universities was selected by a Dutch committee on organization, to an important official position in a congress to be held in the Dutch metropolis. *Voila!* Germany was in a huff. Everybody in Germany was personally offended. What would appease this righteous wrath? Could it be done? Yes, and easily. Holland might retain the congress and pay the expenses, but the Holland Committee on Organization and the Holland president would kindly efface themselves and Germany would confer on the *Paye Bas* the great distinction of furnishing the entire official personnel of the congress. It was about this time that a few of the corpuscles—good red blood-corpuscles of William of Orange—were found floating around in the little kingdom of the beautiful Wilhelmina, and Holland went on with the task herself, laboring all the while under the freezing frown of German disfavor. Well, never did a country extend to a scientific gathering such hospitality; never were better papers presented or more thoroughly discussed; never was there more enthusiasm; never were absentees missed so little.

The Congress was opened in the classic halls of the Ancient University of Amsterdam, with a scholarly address delivered in French, German, English, and Italian, by the learned president, Professor Treub, the trend of whose remarks was in the direction of conservatism. The audience was made up of representative men from practically every advanced country in the world. There were numerous representatives from the United States, among whom I noticed Drs. A. and E. A. Vander

Veer, Albany, N. Y.; Janovin, New York City; H. Gordon, Portland; A. Palmer Dudley, New York City; J. H. Carstens, Detroit, Mich.; J. M. Baldy, Philadelphia; G. J. Engelman, Boston; E. P. Davis, Philadelphia; L. H. Dunning, Indianapolis, Ind.; Clinton Cushing, Washington, D.C.; J. M. Withrow, Cincinnati, Ohio; A. F. A. King, Washington, D.C.; A. Goldspohn, Chicago; Geo. M. Edebohls, New York City; Henry D. Fry, Washington, D.C.; Ernest Laplace, Philadelphia, and H. Tuholske, St. Louis, Mo. It is doubtful whether any other country outside of Holland and France had a larger delegation or a more interested one.

ALEXANDER'S OPERATION.

It is not within the purpose of a letter, such as this, to give a detailed account of the proceedings of the Congress, or to anticipate the publication of any of the valuable papers by giving a résumé of their contents. It may not be improper, however, to state that one of the earliest events of interest was the discussion of the paper by Dr. Goldspohn, in the course of which there was a free debate as to the present status of the Alexander operation. The special point of interest was the personal participation of Dr. Alexander himself in the debate. Tall, unostentatious, frank and commanding, this splendid type of the honest professional man quite captured the convention, by stating in effect that Alexander's operation was devised at a time when opening the peritoneal cavity was a more serious matter than at present, and that, therefore, much of the reason for its performance had passed away. He stated further that it ought not to be performed in irreducible retrodisplacements of the uterus, nor in those cases in which clearly reducible displacements are complicated with organic disease of the uterine appendages. In cases that fall within these limitations the comparatively simple operation is quite sufficient to effect a cure. It is needless to say that this clear statement of the purposes and limitations of the operation by its author served to place it on a more definite footing than it has heretofore enjoyed. I can not recall any person who has so much excuse as Dr. Alexander to plead for rescue from his friends, particularly from inconsiderate imitators in America, who are daily perpetrating a misapplication of his principles while they and the world are naturally holding him responsible for the unfortunate results.

OVARIAN PREGNANCY.

A very interesting report on the much-disputed ovarian pregnancy was presented by Mlle. Catherine van Tusschenbroek of Amsterdam, who also demonstrated a specimen which she had procured from the clinic of Professor Kouwer of Utrecht. The operation had followed rupture, with extensive hemorrhage into the peritoneal cavity, which occurred six weeks after the patient's last menstruation. At the time of the operation the uterus was found enlarged, the left ovary and tube normal, while at the right ovary was found a tumor as large as a walnut, to which blood-clots adhered. The right ovary and tube were removed. The tube was quite normal; the fimbriæ were somewhat conglutinated, but the lumen was free. Pathologic adhesions between the ovary and the tube did not exist. The tumor and the ovary showed, near the top, the place of rupture, from which a ruddy fringe came forth. After being hardened the specimen was opened by a median section going through the fringed opening. By this section the gestation sac in the tumor was cut in two halves and an embryo appeared of about 12 mm. in length, fixed by a short and thick umbilical cord. Macroscopic inspection left no doubt that the case was one of ovarian pregnancy. Microscopic investigation showed that the impregnated ovum had developed within a Graafian follicle. That was proved by the fact that the wall of maternal tissue which surrounded the ovum showed the structure of the ruptured Graafian follicle—the well-known corpus luteum. Decidual transformation of the connective tissues in the ovisac was nowhere to be found. The fetal elements were quite the same as in normal uterine placentation. The fetal villi showed the plump and irregular forms which belonged to this early stage of pregnancy. Their epithelial investment consisted of two layers—Langhaus' cells and the syncytium. The latter was in many places ciliated. The conclusions which Mlle. van Tusschenbroek came to were as follows: 1. Ovarian pregnancy was a fact. 2. Ovarian pregnancy meant pregnancy in a Graafian follicle. 3. The wall of the pregnant Graafian follicle not being transformed into decidual tissue they must conclude that for the implantation of the ovum Webster's decidual reaction was not a *conditio sine qua non*. 4. One piece showing a regular development of characteristic syncytium, they had a new and incontestable proof that syncytium had nothing to do with uterine or tubal epithelium and was an offspring of the fetal ectoblast.

FIBROMYOMATA, ETC.

The questions formally discussed were fibromyomata, antisepsis and technic, influence of posture on the size of the pelvis, and comparative indications for symphyseotomy, Cesarean section and artificial delivery. None of the Germans were present to read their promised addresses, but the gaps thus caused were easily bridged. There was a general chorus in favor of the abdominal route for operations, except for incipient cervical cancerous lesions, etc. Symphyseotomy found several champions. Doyen delivered one of the addresses on the surgical treatment of fibromyomata. He considers phlebitis, albuminuria, intestinal occlusion and malignant degeneration of the fibromatous uterus, imperious indications to operate. He restricts the vaginal route to a mobile uterus in multiparæ or extremely obese subjects. Since he has been using his crushers and substituted ligatures for forceps he has performed hysterectomy 52 times for fibromyomata: 27 vaginal, all recovered; 25 abdominal, all recovered but one, with complicating phlebitis of the limbs and calculous appendicitis. Schauta restricts the vaginal route to tumors which do not extend beyond the umbilicus and can be pushed down into the small pelvis. He operates only after failure of all other means to arrest accidents due to the tumors, and discountenances all curetting, supravaginal amputation and ovarian castration for fibromyomata. Delagenière reported five cases effectively relieved by the simple process of ligating the uterine arteries; no recurrence of the tumors during the three to one year since. The tendency of the Americans, Baldy, Carstens, and Tuholske seemed to be in favor of supravaginal amputation in certain conditions, in which Treub and others concurred. Gordon expressed his disapproval of myomectomy as an insufficient operation. Treub reported a number of successes attained with injections of ergotin and electricity alone, which he advocates for more general adoption. He considers supravaginal ablation with a buried elastic ligature, the chosen method, and has followed it in 31 cases, with three failures.

POSTURE.

The addresses on posture were by Pinzani, Bué, and Walcher. The latter claims to have been the first who ever noted the influence of position on the size of the pelvis, and especially in the position with the legs hanging, or hyperextension. But Bué traces the first study of the subject to Crouzat. Pinzani reported tests with 102 parturient women, which established that assuming, in turn, the lithotomy position and then hyperextension, the promonto-subpubic diameter increased from 2 to 17 mm., averaging 7.5. Changing from the lithotomy to the obstetric position, the increase was 0 to 5 mm., and from the latter to hyperextension, the increase was from 2 to 12. The increase in the conjugate diameter from the obstetric to hyperextension, is larger with a deformed pelvis, averaging 8.7. The coccygo-pubic diameter in cadavers decreases 5.6 mm. on an average, changing from the first to the second position, and 9.2 from the second to hyperextension, a total of 9 to 26 mm. Pinard's experience has been that in 10 per cent. hyperextension does not enlarge the pelvis, and that in the rest the average

increase in the diameter is but 3 mm. Pestalozza observed that the small average of 5 mm. increase attained by hyperextension in his experience does not account for the undeniable clinical benefit derived from it, and he suggests that possibly the lowering of the symphysis, which he measured on cadavers and found averaged 3 cm., may be a factor in the result attained.

TECHNIC AND ANTISEPIS.

In the discussion of technic, Doyen stated that after operations when he anticipated infection, he covered the patient with ice from the nipples to the pubis. He disinfects the region with very hot water, soap, sublimate and phenol at 2.5 per cent., and now uses glutel exclusively for his dusting powder. Richelot used to ascribe certain deaths, he stated, to "lack of resistance of the subject," but he now rejects this excuse and considers them all due to infection.

SYMPHYSEOTOMY, ETC.

The several addresses on symphyseotomy, etc., were by Pinard, Pestalozza, and Fancourt Barnes—the last-named not being present. The former observed that the most numerous cases of contracted pelvis are those with a promonto-pubic diameter not less than 6.5, and in these circumstances he prefers symphyseotomy as less dangerous than opening the abdomen and uterus, citing a case in which it was successfully performed on an open country road. He utterly rejects premature artificial delivery, embryotomy of a living child and any use of forceps or version involving a struggle between the fetal head and bony resistance. "Since antisepsis has come in, all these procedures should be abandoned." Pestalozza allowed certain conditions in private practice justifying premature artificial delivery, especially in young primiparæ. Symphyseotomy, on the other hand, he considers counterindicated in private practice, and that it should be reserved for multiparæ. With a pelvis under 7 cm. the dangers rapidly increase for mother and child. Between 8 and 8.5 it should only be preferred when the fetal head is rigid and forceps repeatedly used in vain. Under 7 cm., Cesarean section and embryotomy are the only operations to be considered, and the indications for the latter are becoming constantly more restricted, although in private practice it is at times still advisable, and also in case of fever, albuminuria, hematuria and eclampsia. Treub and Nijhoff consider symphyseotomy more dangerous than section, on account of the difficulty of keeping the region aseptic. Stijn Parve asserted that he had had only four fetuses die in fifty artificial deliveries, between the thirty-fourth and thirty-eighth week. Fancourt Barnes, in his communicated address, mentioned the extreme rarity of contracted or deformed pelves at London, and declared that surgeons now lauding symphyseotomy would probably abandon it later. Jouin recommended, as an effective palliative operation for cancer of the uterus, singeing—"flaming"—the cancerous surfaces with alcohol for thirty to ninety seconds after curetting and thermocauterizing them, the vaginal walls protected with a thick coating of vaselin. Rapin called attention to a method of preventing threatening asphyxia of the child during difficult labor by introducing 500 to 600 c.c. of air filtered through cotton, into the amniotic cavity, through a rubber tube or urethral sound. In the three cases thus treated the child was born without any mucous accumulations or amniotic fluid in the respiratory passages, and he urges general adoption of the method, possibly using oxygen. The uterus is so protected at the time that he does not think there can be any danger of embolism. Van de Velde confirmed the value of subcutaneous injections of methylene blue in eclampsia and albuminuria, for both diagnosis and prognosis. Duret reported three cases of inversio uteri successfully operated on by his method (described in the JOURNAL, xxxii, p. 132). Doumer also confirmed the benefits derived from high-frequency and high-tension currents in congestive hyperplasia of the uterus, in which they promote resolution to a marked extent in addition to their action on the pains and amenorrhea.

LAPLACE FORCEPS IN INTESTINAL ANASTOMOSIS.

Dr. LaPlace of Philadelphia made a hit with his ingenious forceps for intestinal anastomosis. It is difficult to describe this device, which its inventor, with the assistance of Doyen, demonstrated to the open session of the Congress, and, during the succeeding days, privately to all who were interested, which seemed to include everybody.

OVARIAN TRANSPLANTATION.

Another American paper that attracted a vast amount of attention, but no discussion, was offered by Palmer Dudley of New York. It was short and consisted in the report of a case in which he had transplanted and implanted an ovary, not merely with the object of perpetuating the menstrual molimen, but the fecundity of the patient. The procedure consisted in opening the fundus of the uterus and implanting into the incision thus made the normal ovary, which had been removed from its original site. This implantation was carried so deeply as to permit a zone of the ovary to project into the uterine cavity, the idea being that ovulation occurring from this disc of ovarian surface would subserve the purposes of fecundation. The sequel of the case has not yet been told, but there is every evidence that the surgical procedure is a *fait acompli*. The world will look forward with interest to the outcome of this meritorious experiment, and the hope that it may be the means of preserving the prospect of maternity of the unfortunate victims of destructive tubal disease.

It is impossible to even allude to all the valuable work presented at the memorable meeting—contributions that will enrich the literature of gynecology and abdominal surgery for more than a day.

The question of the next place of meeting was left in the hands of a committee. Bucharest's invitation was presented by Dr. Jonnesco, Barcelona's by Dr. Zargas, London's by Dr. Jessett, and that of the United States by Drs. Engelman and Reed. It seemed impracticable to settle the question at the time. The *ad interim* organization of the Congress in the United States, as determined by the Executive Body of Founders at Amsterdam, consists of Geo. F. Engelman, L. S. McMurtry, J. Whitridge Williams and Charles A. L. Reed, committee, and A. Palmer Dudley of New York City as secretary.

A serious question relating to the future character of the Congress is under advisement by the various national committees, and is to be disposed of by an *ad interim* international conference. It is practically a question of an open or a closed-door policy, and embraces a plan for the more definite organization of the Congress. The matter is in the hands of judicious men, and will be disposed of in accordance with the best interests of the Congress and of the status of gynecology and abdominal surgery in the scientific world. The splendid fruition that has been reaped at the three congresses already held leads to the hope of subsequent harvests.

CHARLES A. L. REED, M.D.

London.

(From Our Regular Correspondent.)

LONDON, ENG., Sept. 4. 1899.

SANITARY CONGRESS.

An interesting and valuable organization has just closed its session at Southampton. This is the annual congress organized by the Sanitary Institute—the great semi-official representative body of popular sanitary interest and progress. It has established a small museum of hygienic and sanitary apparatus, named in honor of the great sanitarium, the Parkes Museum, in London, where courses of lectures and demonstrations on hygienic subjects are given and examinations held to qualify for the post of sanitary inspector. As the guileless Neapolitan yearns for a fruit-stall, so almost every professional or semi-professional organization in England, medical, legal, commercial and educational, hankers after the control of some "pass"

public service examination—and the fees attaching thereto. One or two most prominent organizations might be mentioned both medical and educational, which, organized originally for the good of the profession, now regard the profession as existing chiefly for their benefit and exploit it accordingly. And the Sanitary Institute, invaluable as it is as a means of popular education in hygiene, seems to have fallen somewhat into this rut, if one may judge by the strong "permanent official" flavor of crudity and superficiality about some of its courses of lectures and of the speeches and discussions in the recent congress.

Some of the papers and the discussions following were admirably adapted to increase an intelligent public interest in sanitary measures, notably those of Prof. Percy Frankland, on water-supply; Dr. Arthur Newsholme, on the prevention of consumption, and a symposium on the re-housing of the poor dispossessed by the destruction of London slums.

LONDON'S WATER-SUPPLY.

But there were a few things which were crude to the verge of rankness. The address of the president, Sir William Preese, for example, began by alleging that Moses was not only the originator of all sanitary legislation, but one of the ablest and most advanced sanitarians the world had ever seen! Indeed, he doubted whether all our boasted progress had succeeded in *bringing us up to his level*. And, as a triumphant illustration, he declared that Moses directed garbage to be burned outside of the camp, and our most modern garbage crematory was only a tardy and incomplete fulfilment of this.

After asserting that Moses "invented" the idea of pure water, he took up the burning question of the water-supply of London, and calmly announced that the Thames would furnish an abundant supply of the purest water for fifty years to come. On what ground he bases this astonishing statement, other than that Moses did not forbid a city of 5,000,000 inhabitants—as his gift of prophesy would have easily enabled him to do if it had been necessary—to take its water-supply from a thirty-seven-inch trout-stream, does not appear in his address.

The man who will say this will say anything. The Thames valley is already practically one continuous village for thirty miles above London, and during the past month the water companies actually drew out of the river between one-half and two-thirds of the total flow of the stream. The water, by the mercy of Heaven and the luck of the British army, has remained fairly pure so far, but a simple sewage "leak" from some river town, village or even farm-house might at any moment escape the vigilance of the authorities and poison the metropolis before it was discovered, and even waiving all this, if a river has to be sucked half-dry to-day to supply a rapidly growing city, what will become of it fifty years hence? It is a simple problem in arithmetic. After this we are barely even surprised to find Sir. William throwing contempt on the London County Council's masterly scheme for a supply from the Welsh Mountains, by an idiotic piece of clap-trap about "robbing gallant little Wales of her water."

MEAT INSPECTION.

One of the papers in the Section of State Medicine, at the recent Portsmouth meeting of the British Medical Association, was an admirable review of the questions and methods of meat inspection, by Dr. Manby, health officer of Liverpool. He strongly urges the total abolition of the private slaghter-house, and instanced the German regulations as a model of their kind. In place of the original public slaughter-house, divided into small rooms or stalls, each of which was rented to a separate butcher at a fixed sum, the most modern arrangement is now to have one large hall in which all the slaughtering is done, each butcher simply using the space which happens to be vacant at the time. All this work is under the immediate supervision of a single official, any possible trickery is avoided, and the ventilation and cleansing arrangements are immensely simplified and approved. The feature which at first would strike both English and American consumers somewhat strangely is the establishment of a "Freibank" or municipal meat market, to which is sent all meat which is distinctly inferior in general quality, on account, say, of the age of the animal, leanness or non-essential defects of that description, but which is not so dangerous to health as to require its absolute condemnation. The method is said to have worked extremely well and furnished a supply of sound and unobjectionable meat to the poorer classes at barely half the market price. To prevent any possible re-selling of the meat, not more than six pounds will be issued to any one person.

INSPECTION OF SCHOOLS.

Another excellent proposition made in this Section was that of Dr. Sydney Marsden, that all schools, not only public but private, should be placed under the control of the medical officer of health for inspection as to ventilation, air space, drainage arrangements, etc., in just the same way as factories. He pointed out that while a certain amount of supervision was now exercised over the public schools, there was practically none, except by purely voluntary arrangement, over the private schools, many of which being held in private houses and in rooms extremely ill-adapted for the continuous occupation of large classes of children were serious offenders in this regard. In Germany these schools are under state supervision and regulation, not only in these but in many other regards precisely as the state schools.

MEMORIALS.

A most excellent custom in respect to memorials is about to be followed at Newcastle, in memory of the late Dr. Nesham, who for many years occupied the chair of midwifery in the University of Durham. The form to be taken by the memorial will probably be a new hospital or the addition of a pavilion to the present building. The action is taken by the governors of the Hospital and some of the leading men of Newcastle, and is an excellent precedent for future extension. As a rule memorials to members of our hard-worked profession exist either in the hearts and memories of their patients or in the form of some chair, lectureship or ward for which they themselves have been devoted enough to furnish the funds. When the laity begin erecting monuments to us, it really looks as if our day is at last coming.

MEDICAL ATTENDANCE OF THE POOR.

A curious condition of affairs, of some practical interest to the profession, exists in regard to the medical attendance of the poor in Whitechapel. Some years ago the local guardians, in consequence of a scandal arising from grave delay in obtaining the services of the district medical officer, passed a regulation permitting any urgent case, which was unable to secure the services of the officer, to call in any practitioner in the neighborhood and send the bill for his visit to the Board of Guardians; accompanied by a statement of their previous call on the regular officer. This looks like a reasonable and even liberal arrangement, and the Guardians make a pompous report to the effect that it has worked admirably, has been "of immense advantage to the poor and no abuse has been made of it."

LEAD-POISONING.

A curious survival of an ancient, but we had supposed practically extinct, cause of lead-poisoning, has recently put in an appearance in Paris. Symptoms of mild plumbism have been rather common and wide-spread of late in the French capital, and for some time the profession was quite at a loss as to either the character or cause. A few, however, proved so strikingly characteristic, that an energetic investigation was set on foot as to the source of the lead salts, and it was found that the bakers of the city were in the habit of using old building timber, floors, etc., for the purpose of heating their great ovens, and by the persisent use of large quantities of this sort of dust-containing material it is believed not merely lead but also copper and creosote has found its way into the in-

terior of the ovens. Loaves which are then placed in the ovens manage to rub off enough of these deposited materials from the floor and walls to, by long-continued ingestion, set up accumulation poisonings in those who eat them. The older form of this sort of contamination, it will be remembered, used to be the ancient Dutch oven, where the fire was lighted in the oven itself, and then after a sufficient heat had been obtained, the ashes swept out and the loaves put in their place. In this way much larger amounts of lead and copper were introduced and some of the poisonings were very severe, so much so that the use of such fuel was forbidden by law in many Continental cities. The regulation has now been revived by the Paris Council and extended to the use of such wood or boards anywhere about ovens or furnaces.

Canada.

(From Our Regular Correspondent.)

TORONTO, Sept. 16, 1899.

TO STUDY BERI-BERI.

It is said that Dr. Hamilton K. Wright—McGill '95—has received through Mr. Chamberlain, Colonial Secretary, an appointment as pathologist to the Straits Settlements, with specific instructions to more especially study beri-beri. Shortly after graduation, Dr. Wright received the appointment of medical registrar at the Royal Victoria Hospital, and in 1897 gained one of the exhibitor's grants of the British Medical Association for his researches on the pathology of the nervous system. He also obtained, in the same year, the John Lucas Walker exhibition in pathology, at the University of Cambridge. With the assistance of these, he further undertook valuable researches in the nervous system in Cambridge and Heidelberg, and in the following year received the appointment as pathologist to the Claybury Asylum in Essex, England, the largest institution of its kind in Great Britain, if not in the world. His work in that institution and its good results brought him to the attention of the medical advisers of the colonial office, who recommended him for his recent appointment.

MEDICAL COMMISSION IN CAPITAL CRIME AND INSANITY.

Dr. James Russell, medical superintendent of the Insane Asylum, Hamilton, Ont., contends for the appointment of such a commission, in a recent article, read before the Ontario Medical Association, on "The Plea of Insanity in Medical Jurisprudence." This is the outcome of long thought and a careful study of the whole subject and an experience extending over a considerable number of years in giving expert evidence in these cases. This commission should be composed of men of high standing and long experience in their profession, appointed by the Crown, for the purpose of examining all prisoners charged with a capital offense, and for whom the plea of insanity has been entered. Dr. Russell also thinks that when insanity is alleged, a sufficient period of time should be allowed to elapse between the perpetration of the criminal act and the trial of the accused, so that the examiners may be enabled to study the nature and progress of the case, on which to base conclusions that will not be subject to any doubt. Were these suggestions followed up, all unseemly confliction of medical evidence would be abolished; and the public mind would be satisfied that justice had been done and the law vindicated. There is a growing feeling in the public mind of Canada, that too many of these criminals escape merited punishment by the successful manner in which the insanity plea is urged in court, and any measure such as the appointment of a medical commission of this character and scope that would tend to increase confidence in the integrity of our courts, should receive all due consideration.

OVERCROWDING OF THE INSANE IN PRINCE EDWARD ISLAND.

Both the professional and lay minds in this staunch little province are being considerably agitated over the construction of an "annex" to the Provincial Asylum for the Insane. Some 7½ years ago, the grand jury of that Province, directed attention to the overcrowded state of the asylum building, but the government did nothing until about four years thereafter when it placed a number of the inmates of the poorhouse under the same roof with the insane. Very recently tenders were called for the erection of an "annex," but the authorities move so slowly in the matter of awarding the contract that the people are very much incensed at their dilatoriness and at the fact that the poor lunatics are to be left in the conditions described by the grand jury of Queen's County, to endure the rigors of another winter, huddled together, sleeping ten in a room, quartered in the attic, cold and shivering. This is the treatment meted out to these helpless and unfortunate ones by the representatives—or as one writer describes them—by the mis-representatives of a Christian people. Pressure ought to be brought to bear on the governments of the different provinces at once, where these conditions of affairs exist—as Prince Edward Island is not alone in this matter—other provinces being known to be notoriously negligent in the same regard, in order that this crying evil be speedily remedied.

PRESCRIPTIONS WITH SCRIPTURAL QUOTATIONS.

The newly-appointed detective of the Ontario Medical Council, is rapidly getting into harness. From St. Thomas, Ont., comes the report that he has instituted proceedings against the "Rev." J. G Evans, "M. D.", whose professional card bears the following: "The Nazarene," Medical Mission, Jericho, Syria. In writing his prescriptions, the pseudo-practitioner is alleged to have issued the following scriptural injunctions, which were printed on the top of his prescription blanks: "And He sent them to preach the kingdom of God and to heal the sick." "And heal the sick that are therein, and say unto them the kingdom of God has come nigh unto you." "Heal the sick, cleanse the lepers, raise the dead, cast out devils; freely ye have received, freely give." Following the written prescription, no doubt as an adjunct "signatur," appearing in bold strong type was: "Ask the Lord to bless this as you take it." Subsequent information from Detective McPherson has elicited the fact that the "divine healer" has decamped; probably he has gone to Jericho.

Deaths and Obituaries.

ROBERT B. CRUICE, M.D., Philadelphia, while making a professional call, September 15, died suddenly, at the age of 61 years. He was born in Ireland, came to this country in 1850, and was graduated from the University of Pennsylvania in 1859. In July, 1861, he was appointed assistant-surgeon to the 38th Regiment, Pennsylvania Vols., and later, with the 12th Cavalry, at the battle of Chancellorsville, he was taken prisoner, but subsequently escaped and joined his command. Owing to an injury received by the fall of a horse, he was retired from the army in 1863, and in September of that year was appointed house surgeon to St. Joseph's Hospital, Philadelphia; in 1867 he became physician and surgeon in charge. In 1875 he was elected visiting surgeon, and, on the death of Dr. William V. Keating, in 1894, succeeded him as president of the medical staff. At the time of his death he was a member of the College of Physicians of Philadelphia, of the Philadelphia County Medical Society, the Philadelphia Medical Club, and the AMERICAN MEDICAL ASSOCIATION.

CHARLES THOMAS ROBINSON, M.D., Columbia University, N. Y., 1895, died from cardiac disease, at his home in New York City, September 11, aged 26 years. He spent a year as house surgeon in St. Catharine's Hospital, Brooklyn, N. Y., after which he began practice in Harlem, New York City.

THOMAS C. WORTHINGTON, M.D., died at Laurel, Md., September 15, after a month's illness. He was 80 years of age, and

a widower without children. He was graduated from the medical department of the University of Maryland in 1840.

ALFRED BROWN, M.D., Hellertown, Pa., died in that city on September 11, aged 54 years. He was graduated from the University of Pennsylvania in 1871, and had practiced in Hellertown for the past twenty-seven years.

J. H. Cook, M.D., Dardanelle, Ark., died September 14.... R. H. Culbertson, M.D., Brazil, Ind., September 12, aged 69....Hosea A. Little, M.D., Linton, Ind., September 9, aged 30....M. D. Raiford, M.D., Waller, Texas, September 30.

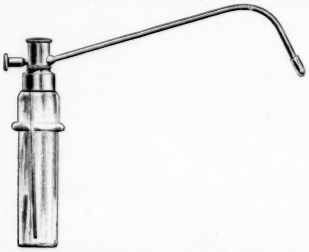
New Appliances.

An Instrument for Intratracheal Medication.

BY ALBERT C. HEATH, M.D.

ST. PAUL, MINN.

The only excuses for offering this instrument are simplicity and efficiency, two essentials which are not always found in medical and surgical appliances. I have used it for the past two years, and find it suits its purpose, i. e., to inject solutions into the trachea and bronchus. The instrument consists of an ordinary Davidson oil atomizer bottle and cap, but having in place of the ordinary atomizing canula a much longer one without the small inner tubing which delivers an unbroken stream; this canula is so curved that one can easily bring its point over the opening to the larynx, or even between the vocal cords if necessary. I use this instrument with a Davidson cut-off under about twenty pounds air-pressure, and am in the habit of using it in the following way: Under illumination with the laryngoscope in position, the tip of the instrument being placed within the oropharynx vertically over the opening to the larynx in its axial plane, having previously observed the



rhythm of the breathing, injection is made with the inspiratory effort. After a little practice one can gauge the amount of the medicine to be injected by the touch of the thumb on the cut-off. Intratracheal medication can be accomplished without touching the tissues, and with no discomfort to the patient except that which the medicine produces after it is in the trachea. Intratracheal injections can be given even without the use of the laryngoscope, by placing the tip of the instrument in the oropharynx just above and posterior to the epiglottis, then at the same time with forced inspiration the injection is made. This can be done with the most intractable patient. This instrument is made by the Davidson Rubber Co., Boston, Mass. 140 Lowry Arcade.

Suggestions for an Antiseptic Suit.

BY JESSE HAWES, M.D.

GREELEY, COLO.

The antiseptic suit is usually made of common blue denim. Seven yards is enough for the average person. Stretch the cloth from the floor up one side of the person, loosely over the crown of the head, and down to the floor on the opposite side. Cut arm-holes opposite the shoulders. Pin the whole width of the cloth about the legs, from the floor to the perineum. Sew the edges as pinned. This forms the legs of the suit. Sew double thicknesses of denim over the lower end of the pants legs. Lap the two front edges over the chest and abdomen, six or eight inches, and pin in this position. Pin the denim from the back of the head to the nates. Remove surplus cloth. Leave enough cloth in the suit to loosely envelop the person, when wearing an ordinary suit of clothes. Gather the front edge down, over the forehead, level with the eyebrows, and pin. Place a flap 5x10 inches, across the face below the eyes. Sew one end of the flap, and fasten the other with strap and buckle. Sew in loose sleeves, fasten with strap with buckle around the sleeve at wrist. Attach two rows of buttons, eight inches apart, down the right side of the front; one row should be just at the edge, the other eight inches to the right of the edge.

Dr. Hawes' Antiseptic Suit for use in Contagious Diseases.

Fasten a belt with buckle, around the hips. Sew a pocket on the left breast for handkerchief and thermometer. When the suit is complete, soak it, a pair of cotton gloves, and pocket handkerchief in breast pocket, in a 1 to 500 bichlorid solution.

Lay the suit away for use when needed. When called to a recognized case of contagious disease, dampen the suit lightly all over with any clean water on leaving your office. Put on the dampened suit at the door of the patient; remove it on coming out of the room; wipe the face with the bichlorated handkerchief. Roll up the suit and put it under the buggy seat loosely, or in a little cloth bag. Every germ that has come in contact with the damp suit will be destroyed. Remember that the corrosive salt does not leave the suit, nor grow weak with age. The suit is ready for use at any time, by being lightly dampened with clean water.

An occasional dampening with the 1 to 500 solution, while almost unnecessary, will render the suit more strongly antiseptic. Cost of material for suit, less than $1.00.

Parrots and Psittacosis.—A French navigation company, the *Compagnie des Chargeurs-Reunis*, has forbidden the transportation of parrots on its vessels, as a preventive measure against psittacosis.

Miscellany.

Delivery of Association Buttons.—Owing to the great demand for the A. M. A. buttons during the past week, we have been unable to fill all orders, but as soon as a new consignment is received from the manufacturers, probably within a few days, orders will be filled.

The American Association of Obstetricians and Gynecologists met this week at Indianapolis. The following officers were elected for the ensuing year: President, Rufus B. Hall, Cincinnati; Vice-Presidents, L. H. Dunning, Indianapolis, and T. J Crofford, Memphis; Secretary, W. W. Potter, Buffalo, and Treasurer, X. O. Werder, Pittsburg, were re-elected. The next meeting will be held in Memphis, Tenn.

Preservation of Meat.—A Danish zoölogist, Fjelstrup, has suggested a method of preserving meat, founded on the principle that the decomposition of the blood is the cause of the putrefaction. At the moment the animal is slaughtered the heart is exposed and a ventricle opened for the complete evacuation of the blood, after which the venous system is injected with a solution of salt through the intact ventricle. The experience of three months has been very favorable.—*Magasin Pit.*, July 1.

Fedoroff's Extracapsular Abdominal Hysterectomy.—The special features of this method are that the uterus is extirpated with its peritoneal covering—hence the term extra-capsular—and that the posterior and anterior culs-de-sac are in turn exposed and reached through the abdomen and opened with the scissors. Forceps are then introduced through the vagina and these openings to clamp the broad ligaments. The bottom of the pelvic cavity is not sutured nor separated from the vagina. Four observations of cases thus treated are described in the *Medicinskoye Obozrenye*, v, 51, the results justifying the recommendations of the author.

Serotaxis with Solutions of Caustic Potash, a New Method of Diagnosis.—The fact that caustic potash dissolves the tissue with the production of a clear serous fluid, suggested to Frickenhaus that this outward stream of serum might sweep bacteria out with it and ensure a correct diagnosis. In cases of lupus he was thus able to derive tubercle bacilli, and in lupus erythematosus a hitherto undescribed micro-organism. He also applies a 1 to 3 per cent. solution of caustic potash to lupus nodules, painting the surface every second or third day, and finds that the nodules heal well under this treatment. He urges further research with "serotaxis" in favus and trichophytosis.—*Derm. Cbl.*, August.

Queries and Minor Notes.

COMMERCIALISM.

WAUSEON, OHIO, Sept. 12, 1899.

To the Editor:—Enclosed I send you a circular letter which I received from your city. I see you are speaking of commercialism. What do you think of this one? P. J. L.

ANSWER:—This time it is a woman who offers to divide her fees with the doctor who will send her cases. She "cures cancers." Her circular is made up of "hogwash," self-laudation and brag. She uses the oldtime buncombe about the "busy practitioner" who has no time to study the "etiology, pathology or the latest or best methods of treatment of such maladies" (cancer). Being a specialist, she tells us she has made a deep study of all these, and also of the latest methods of treatment: "In cancer I have a method of treatment which is wholly original with me, and known only to me." But she is not as liberal as some evidently are, judging from a letter we published three weeks ago: "I shall give you fifteen per cent. for all cases sent me amounting to $300 or less, for all over that amount twenty-five per cent." However, she evidently has her eyes open to the necessity of "cash down" policy for she instructs her patrons to let the patients know they must be prepared to pay cash in advance, "and then your fee as well as mine will be secure." And then here is another wise sentence: "When you are sure that a patient has fully made up his mind to come for treatment, kindly tell me how much he is able to pay, and about what he is safely considered worth." But for brazen assurance, *this* is hard to beat: "It would be well to inform the persons who have the bills to pay, that the treatment, of necessity, must come high, as I am the only one anywhere who does the work by this method."

We would not have our readers imagine that the sender of this circular is among the reputable physicians of this city, her name not being in the list of members of any of the societies, but she evidently does belong to those who believe in this phase of "commercialism" in medicine. Further, her name is not in the list of practitioners as published by the Illinois State Board of Health, while Polk's "Med. and Surg. Register of the United States and Canada" gives Missouri Medical College as her alma mater. The 1898 "Chicago Medical Blue Book" gives St. Louis Medical College, while the 1899 Blue Book puts her down as "eclectic, no information;" and Connorton's Medical Directory has her credited to Hahnemann Medical College, Chicago, 1884. Possibly she has forgotten where she did graduate.

NURSE AS ANESTHETIZER.

JOLIET, ILL., Sept. 7, 1899.

To the Editor:—Kindly inform me whether certificates or diplomas issued by the State Board to graduate nurses allow them to administer anesthetics, or does their training-school diploma cover that? The case is this: One of our graduate nurses here has taken a special course in the administration of anesthetics, and has become very proficient, and, wishing to announce her ability in this respect on her cards, etc., she wishes to know whether she would be allowed to do so, or, would a certificate issued to her by the physician under whom she has been studying be recognized and protect her? J. H. W.

ANSWER:—The Illinois medical practice act apparently makes no provision for anesthetizers other than qualified medical practitioners who have obtained certificates from the State Board of Health. This is obtained only by passing an examination, and the wording of the act is: "No person shall hereafter (after July 1, 1899) begin the practice of medicine *or any of the branches thereof* or midwifery, in the state, without first applying for and obtaining a license from the State Board of Health to do so." A training-school diploma carries with it no legal rights to practice, it is simply the statement that the holder has passed through the course, and a statement of fitness to act as a nurse under a physician's direction. A certificate from a physician would have no more value. The printing and circulation of such a card as mentioned by our correspondent would, therefore, not be advisable.

The Public Service.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., to and including Sept. 14, 1899:

James A. Alexander, acting asst.-surgeon, from the Department of the Province of Havana and Pinar del Rio to Monroe, La., for annulment of contract.

Frank E. Artand, captain and asst.-surgeon, from New York City to join his regiment, the 45th Inf. Vols., at Fort Snelling, Minn.

Edward G. Beeson, lieutenant and asst.-surgeon, 39th Inf. Vols., from recruiting duty at Des Moines, Ia., to Vancouver Barracks, Wash., for duty with his regiment.

Joseph L. Bell, lieutenant and asst.-surgeon Vols., assigned to the 34th Inf. Vols.

Frank S. Bourns, major and surgeon, Vols., resignation accepted, to take effect Sept. 30, 1899.

Alfred E. Bradley, major and surgeon, Vols. (captain and asst.-surgeon U. S. A.), resignation of volunteer commission accepted to take effect Oct. 1, 1899.

Louis Brechemin, major and surgeon U. S. A., sick leave extended.

Julian M. Cabell, major and surgeon, Vols., from San Francisco, Cal., to Washington, D. C., for instructions.

Charles A. Cattermole, acting asst.-surgeon, to duty with troops en route from San Francisco, Cal., to Manila, P. I.

Walter Cox, lieutenant and asst.-surgeon, U. S. A., from the Department of Porto Rico to post duty at Fort Leavenworth, Kans.

Charles F. Craig, acting asst.-surgeon, from Camp Columbia, Cuba, to temporary duty at Fort Hamilton, N. Y.

Thomas E. Evans, appointed major and surgeon Vols., Sept. 9, 1899, and assigned to the 49th Inf. Vols., at Jefferson Barracks, Mo.

John J. Gilhuley, acting asst.-surgeon, to duty with troops en route from San Francisco, Cal., to Manila, P. I.

Charles S. Grant, appointed captain and asst.-surgeon, Vols., Sept. 9, 1899, and assigned to the 49th Inf. Vols., at Jefferson Barracks, Mo.

Howard A. Grube, captain and asst.-surgeon, Vols., to join his regiment, the 48th Inf. Vols., at Fort Thomas, Ky.

Charles F. Kieffer, major and surgeon, Vols., to join his regiment, the 48th Inf. Vols., at Fort Thomas, Ky.

Henry S. Kilbourne, major and surgeon, U. S. A., to inspect the transport *Thomas*, Philadelphia, Pa.

Charles E. Marrow, lieutenant and asst.-surgeon, U. S. A., sick leave extended.

Donald P. McCord, acting asst.-surgeon, from the Department of the Province of Havana and Pinar del Rio, Cuba, to report at Washington, D. C., to the surgeon-general.

Patrick J. McKenna, lieutenant and asst.-surgeon 34th Inf. Vols., resignation accepted to take effect Sept. 8, 1899.

Franklin A. Meacham, major and surgeon, Vols., from New York City, to duty in the Department of California.

William Grey Miller, acting asst.-surgeon, to duty with troops en route from San Francisco, Cal., to Manila, P. I.

Thomas K. Mullins, acting asst.-surgeon, from Troy, Ala., to duty in the Department of California.

Fred W. Palmer, acting asst.-surgeon, from Jackson, Mich., to the Department of California.

William W. Purnell, appointed lieutenant and asst.-surgeon, Vols., Sept. 9, 1899, and assigned to the 48th Inf. Vols., at Fort Thomas, Ky.

Edward A. Romig, captain and asst.-surgeon, Vols., to join his regiment, the 40th Inf. Vols., at Fort Riley, Kan.

William E. de Salazar, acting asst.-surgeon, from duty in the Department of the Province of Havana and Pinar del Rio, Cuba, to report for annulment of contract.

Hugh L. Taylor, acting asst.-surgeon, from the Department of the Province of Havana and Pinar del Rio to report to the surgeon-general at Washington, D. C.

James S. Wilson, lieutenant and asst.-surgeon, U. S. A., now under orders for Manila will report on arrival for examination for promotion.

William H. Wilson captain and asst.-surgeon U. S. A., from duty with recruits at the Presidio of San Francisco, Cal., to Angel Island, Cal., for post duty and to command the company of instruction to be established there.

Movements of Navy Medical Officers.—Changes in the medical corps of the U. S. Navy for the week ending Sept. 16, 1899:

Surgeon M. H. Crawford, detached from the marine recruiting rendezvous, Chicago, Ill., and ordered to the marine recruiting rendezvous, New York City.

P. A. Surgeon E. S. Bogert, detached from the marine recruiting rendezvous, New York City, and ordered home and to wait orders; directed to be ready for orders to sea duty.

P. A. Surgeon J. M. Moore, detached from the *Vermont* and ordered to the marine recruiting rendezvous, Chicago.

Asst.-Surgeon M. S. Elliott, detached from the marine recruiting rendezvous New York City and ordered to the *Vermont*.

Asst.-Surgeon W. M. Garton, detached from the *Franklin* and ordered to the Washington navy yard.

Surgeon P. A. Lovering, ordered to duty at the recruiting rendezvous, Buffalo, N. Y.

P. A. Surgeon W. F. Arnold, ordered to the Pensacola navy yard.

P. A. Surgeon H. N. T. Harris, detached from the Pensacola navy yard and ordered home to wait orders.

Asst.-Surgeon J. S. Chaffee, resignation accepted.

Medical Director J. R. Tryon, detached from duty as general inspector of naval hospitals and ordered home and to wait orders.

Asst.-Surgeon E. C. Parker, detached from the *Pensacola* and ordered to the *Hartford*.

Medical Director J. R. Tryon, retired September 24.

P. A. Surgeon L. L. Von Wedekind, granted sick leave for three months, when discharged from naval hospital, Mare Island, Cal.

Marine-Hospital Changes.—Official List of Changes of Stations and Duties of Commissioned and Non-Commissioned Officers of the U. S. Marine-Hospital Service, for the 21 days ended Sept. 14, 1899.

Surgeon J. H. White, directed to proceed to National Soldiers' Home, Va., for special temporary duty.

Surgeon G. M. Magruder, to proceed to Port Tampa, Florida, for special temporary duty.

P. A. Surgeon C. P. Wertenberger, granted leave of absence for fourteen days on account of sickness.

P. A. Surgeon A. C. Smith, to proceed to Tortugas Quarantine, for special temporary duty.

P. A. Surgeon Charles H. Gardner, granted leave of absence for one day.

P. A. Surgeon H. W. Wickes, leave of absence extended four days.

Asst.-Surgeon L. D. Fricks, to proceed to Key West, Fla., for special temporary duty.

Asst.-Surgeon G. M. Corput, relieved from duty at Egmont Key Detention Camp, Fla., and granted leave of absence for 30 days on account of sickness.

Asst.-Surgeon Walter W. King, relieved from duty at Reedy Island Quarantine, and directed to New Orleans, La., and report to the commanding officer for duty and assignment to quarters.

Asst.-Surgeon F. J. Thornbury, relieved from duty at Baltimore, Md., and directed to proceed to the Immigration Depot, New York, and report to the commanding officer for duty.

Asst.-Surgeon F. E. Trotter, relieved from duty at Immigration Depot, New York, and directed to proceed to Mullet Key Detention Camp Florida, and assume command.

Acting Asst.-Surgeon L. C. Bean, granted leave of absence for one day.

Acting Asst.-Surgeon B. J. Brown, Jr., granted leave of absence for three days.

Acting Asst.-Surgeon Francis Duffy, granted leave of absence for two days.

Acting Asst.-Surgeon B. W. Goldsborough, granted leave of absence for one day.

Acting Asst.-Surgeon A. W. Smith, relieved from duty at Cape Charles Quarantine, and directed to rejoin station at Baltimore, Md.

Hospital Steward F. H. Peck, relieved from duty at Hampton, Va., and directed to proceed to Mullet Key Detention Camp, Fla., for special temporary duty.

Hospital Steward E. T. Olsen, to proceed to Tortugas Quarantine for special temporary duty.

Surgeon H. R. Carter, to proceed to Key West, Fla., for special temporary duty, thence to New Orleans, La., and assume charge of service matters.

Surgeon G. M. Magruder, to proceed to New Orleans, La., for special temporary duty.

P. A. Surgeon T. B. Perry, relieved from duty at San Francisco, Cal., and directed to proceed to Stapleton, N. Y., and report to the commanding officer for duty and assignment to quarters.

P. A. Surgeon J. M. Eager, to proceed to Saginaw, Mich., as inspector.

P. A. Surgeon M. J. Rosenau, detailed as temporary quarantine officer at Havana, Cuba.

P. A. Surgeon J. A. Nydegger, relieved from duty at Marine Hospital, New Orleans, La., and directed to report to Surgeon Magruder for special temporary duty.

P. A. Surgeon Rupert Blue, granted leave of absence for one month and eight days from Oct. 6, 1899.

Asst.-Surgeon J. McMullen, to proceed to Memphis, Tenn., for special temporary duty.

Asst.-Surgeon R. H. von Ezdorf, relieved from duty at Hampton, Va., and directed to rejoin station at New Orleans, La.

Acting Asst.-Surgeon F. B. Adams, granted leave of absence for ten days.

APPOINTMENTS.

Edward J. Agnelly of New York, to be junior hospital steward.

BOARD CONVENED.

Board convened to meet at New York, Oct. 4, 1899, for the examination of candidates for appointment as assistant-surgeon in the service and officers for promotion. Detail for the board: Surgeon H. W. Austin, chairman; Surgeon G. W. Stoner; Surgeon C. E. Banks, recorder.

Health Reports.—The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General of the U. S. Marine-Hospital Service, during the week ended Sept. 15, 1899:

SMALLPOX—UNITED STATES.

Florida: Jacksonville, September 2, 1 case.
Massachusetts: Fall River, September 2 to 9, 1 case.
Ohio: Cincinnati, August 25 to September 1, 6 cases; Cleveland, September 1 to 8, 4 cases.
Pennsylvania: Philadelphia, September 9, 1 death.
Texas: San Antonio, August 31, 1 case, 1 death; Sixteen places, August 5 to September 2, 76 cases, 4 deaths.
Virginia: Portsmouth, September 9, 1 case.

SMALLPOX—FOREIGN.

Belgium: Antwerp, August 26, 3 cases.
Brazil: Rio de Janeiro, July 28, 54 cases, 34 deaths.
Cuba: Casilda, August 1 to 31, 1 death.
Greece: Athens, August 26 to 28, 11 cases, 2 deaths.
India: Bombay, August 15, 11 deaths.
Mexico: Chihuahua, September 4, 4 deaths; Mexico, August 20 to September 7, 9 cases, 6 deaths; Tuxpan, September 4, 2 deaths.
Russia: Moscow, August 12 to 29, 1 case, 1 death; Odessa, August 19 to 26, 1 case, 1 death; Warsaw, August 12 to 19, 3 deaths.
Spain: Valencia, August 22 to 29, 4 cases, 5 deaths.
Turkey: Erzeroum, August 5 to 12, 2 cases; Smyrna, August 13 to 20, 1 death.

YELLOW FEVER—UNITED STATES.

Florida: Key West, September 9 to 12, 92 cases, 3 deaths; Port Tampa City, September 11, 1 death.
Louisiana: New Orleans, from outbreak to September 11, 7 cases, 2 deaths.
Mississippi: Jackson, September 10, 1 case; Mississippi City, September 10, 1 case.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, July 28, 5 cases, 2 deaths.
Cuba: Havana, August 31 to September 3, 5 deaths.
Colombia: Barranquilla, August 20, 1 case, 1 death; Colon, September 4, 1 case, 1 death.
Mexico: Orizaba, August 15 to 26, 6 deaths; Tuxpan, September 4, 2 deaths; Vera Cruz, August 24 to 31, 16 cases, 11 deaths.

CHOLERA.

India: Bombay, August 15 to 17, 1 death; Calcutta, August 15 to 17, 27 deaths.
Japan: Yokohama, July 16 to 29, 2 cases, 2 deaths.
China: Karachi, August 12, 14 cases, 17 deaths.

PLAGUE.

China: Karachi, August 12, 1 case, 2 deaths.
Egypt: Alexandria, August 20, 2 cases, 1 death.
India: Bombay, August 15 to 17, 71 deaths; Calcutta, August 5 to 17, 25 deaths.

CHANGE OF ADDRESS.

Arons, W. C., from Detroit, Mich. to 82 3d St., Fond du Lac, Wis.
Becker, B. A., from Silver Lake, Wis. to 2612 W. Main St., Louisville, Ky.
Blackshear, E., from Jocassee Valley, S. C. to 624 Green St., Augusta, Ga.
Bennett, P. K., from Urbana, Ohio, to Daytona, Fla.
Boyd, D. A., from Platt to Whittier, N. C.
Beem, E. D., from 1301 E. 8th to 705 Main St., Kansas City, Mo.
Covington, J. M., from Rockingham to Wadesboro, N. C.
Cone, S., from Green Park, N. C. to 1616 Eutaw Pl., Baltimore, Md.
Cone, C., from Green Park, N. C. to 1616 Eutaw Pl., Baltimore, Md.
Clements, J., from 1112 to 915 W. 17th St., Kansas City, Mo.
Curtis, W. H., from Columbus to 528 S. 9th St., Lafayette, Ind.
Drummond, P. K., from Chillicothe, Ohio to Wymore, Neb.
Engstedt, A. B., from Omaha, Neb. to 2319 Broadway, Galveston, Texas.
Fuson, A. N., from Lapaz, Ind, to Stockton, Cal.
Gillin, C. W., from Waterloo to Doon, Iowa.
Hopkins, E. G., from Richmond to Glen Allen, Va.
Hardy, J. A., from Kilmarnock, Va., to Welch, W. Va.
Horton, R. W., from Waxahachie, Texas to Wynne Wood, I. T.
Halley, J. J., from Benton City, Mo. to Fort Collins, Col.
Harris, G. D., from Columbus to Indianola, Miss.
Hackett, R. K., from 1318 Washington St. to Carrollton Ave. and Elm St., New Orleans, La.
Jones, G. E., from Connersville to 1003 1st Ave. Evansville, Ind.
Kaumheimer, G., from 508 to 577 3d St., Milwaukee, Wis.
Kuhn, S. F., from North Webster to Elkhart, Ind.
Lyster, T. C., from Ann Arbor, Mich. to Chief Surgeon's office, Div. of Cuba, A. A. Surg, Havana, Cuba.
McDougall, G. T., from Eau Claire to 284 Washington St., Milwaukee, Wis.
McMasters, H., from Memphis, Tenn., to Pryorsburg, Ky.
Munford, from 5027 to 5014 Penn Ave, Pittsburg, Pa.
McGahan, C. F., from Bethlehem, N. H., to Aiken, S. C.
Motter, M. G., from Lake Park, Md. to 2114 Conn. Ave, N.W., Washington, D. C.
Medill, O. E., from Persia to Defiance, Iowa.
Paulin, N. O., from 1232 Euclid Ave, to Box 42, Station B, Cleveland, O.
Post, M. H., from Sunapee, N. H., to 3915 Lucas Ave, St. Louis, Mo.
Richmond, W. B., from Mt. Pleasant, Mich. to Brazil, Ind.
Sessums, J. R., from Duffan to Carlton, Hamilton Co., Texas.
Short, J. L., from 214 W. 15th to 1116 Holmes St., Kansas City, Mo.
Sholars, L. A., from Rosepine to Ruston, La.
Smith, F. C., from Rowan to Waterloo, Iowa.
Woodward, J. H., from Long Lake, N. Y. to Brandon, Vt.
Werner, C. A., from St. Paul, Minn. to Box 162, Marathon, Iowa.
Wright, H. G., from Marshalltown to care Drake Univ., DesMoines, Ia.